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A Dynamic Website for Trucking Companies

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A Dynamic Website for Trucking Companies
Shippernet.com

Sunitha Sajja

A Project submitted in partial fulfillment of the requirements for the
Master of Science in Information Systems



MSIS
PROJECT APPROVAL FORM

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Expected Graduation Date: Summer 2004

Master's Project Title: Dynamic Web site for Trucking Companies (shippernet.com)

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Abstract

The goal of this project is to develop a Web based Internet load posting and equipment viewing system for Computerized Management Systems, Inc which brings the network transport carriers together. Instead of Shippers, shipper agents going to carriers for getting loads and equipments the shipper net web site directly provides a national network where transport carriers, shippers, agents and logistical companies can directly connect for matching shipments with available equipment capacities. This site is developed to provide a single site to view network carriers' available equipment capacities and to maintain an interaction between various carriers to save personnel time and telephone costs. This helps the carriers to reserve the loads and can also keep track of the there loads whether they are delivered or not. The report presents various phases of shippernet.com.

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1. INTRODUCTION

The goal of this project is to develop a Web based Internet load posting and equipment viewing system for Computerized Management Systems, Inc. This Web application is named as Shippernet.com. ShipperNet.com is an Internet load posting and equipment matching board for shippers and users of Truckwin Dispatch and Accounting software. The site provides direct connectivity to a virtual private network of transport carriers. Shippers and their agents can interact directly over a nation wide communication network. Shippers and their agents can tender and transport carriers can view, negotiate, and accept loads and shipments.

To obtain national coverage, the Shippernet.com transport carrier network is divided into the 285 telephone area code zones. Transport carriers cover one or more area code zones. Shippers are therefore assured of having a large number of qualified transport carriers to move their freight. They are also assured of savings time and telephone costs because the system is designed to immediately remove loads and shipments as a transport carrier has accepted them.

This project report will explain the business and technical details of shippernet.com. The report will include a situation analysis, explanations of technologies used, why they were selected, detail design of the database, and details regarding the technical challenges encountered while implementing the Shippernet. The report will also include details on how to use Shippernet and user perspective. The report will include the program code, a WBS (Work Breakdown structure) and a Gantt chart.

2. ABOUT CMS, INC

CMS has been developing transportation software for over 16 years, which is located in Sioux Falls, SD; CMS provides a suite of dispatch and accounting software and connectivity products and services for the truckload industry. In 2003 CMS launched and became the technology partner for Shippernet.com that operates as a National Private Network of Transport Carriers where shippers, shipper agents and logistics companies can access the network directly using the suite of products and services developed by CMS.

CMS also provides a variety of consulting, accounting services and management information designed to improve profitability for each CMS customer. Although there are numerous companies in the industry that may specialize in one of the aforementioned services, none provides all these solutions under one roof based on a pay for performance business model. As a partnership for long hauls CMS continually provide new and improved software and transportation systems to an ever-increasing group of independent carriers. CMS large customer base is located in 44 states and in Canada too. CMS can now provide direct connections or links to a tailor-made web site (shippernet) hosted by CMS to provide a number of value added shipper services. Shippernet is designed to be efficient and effective to save time and money for shippers and carriers. CMS understands how to target your best customers using its proprietary products and has the experience to close sales.

The system is developed to provide the network with computer and Internet software to keep load and equipment information continually updated as events are occurring and to enable multiple offices to view and share information over the Internet

without the high costs of dedicated phone and data lines. They are also assured of savings time and telephone costs because the system is designed to immediately remove loads and shipments as a transport carrier has accepted them.

2.1 CMS ORIGIN AND SUCCESS

CMS was founded in 1987 to provide winning software for truckload carriers having from five to hundreds of trucks. The origin of the idea came from the company's founder and President, Jerry Noonan during his prior work experience with the transportation industry that began over 30 years ago. His background in transportation, accounting and telecommunications is one of the reasons CMS continues to excel in this industry. CMS looks for partnership relationships. A "technology partner for the long haul". While working with clients he noticed many companies are wasting time and telephone costs. Keeping in mind to keep track of all loads and equipments and to increase the transportation industry he wants to develop shippernet.com.

CMS have complete Carrier Directory of our Network Members so that shippers can learn about over services. CMS customers are quickly recognized and CMS for its innovative approach to a very complex and common problem. As CMS client base grew, it was able to analyze the different market segments and understand which companies were most likely to succeed using pay-for-performance. Its goal is not volume, but performance and to achieve this end we cannot work with every account, but need to work with the right accounts that form the best revenue partnerships. So we keep track of all carriers MC (Motor Carrier) numbers and DOT (Department of Transportation) numbers for each carrier along with a link to www.saferys.org, the Federal Motor Carrier Safety Administration. Today CMS works with more than 90 companies in the world. For each carriers and shippers, CMS success is measured based on the vision for the future and amount of the revenue that is generated.

2.2 CMS: A BETTER INVESTMENT IN BUSINESS

CMS assists shippers to interface directly to the site for load and shipment tenders and equipment capacity viewing. There is no cost unless complex computer interface programs must be developed. CMS also have a product called Truckwin Direct Connect in which many users are shipper agents or logistical companies. All these companies can also export loads and shipments to the site (shippernet) for viewing. The cost included in their annual service contract. Transport carrier that does not currently use Truckwin Direct Connect software must be a member and pay a Membership Directory Listing Fee and use Shippernet's proprietary load notification software. Shippernet.com is designed as a backhaul network. Many times a transport carrier will negotiate a more competitive price for a load or shipment that returns equipment capacities to their bases of operation. Load and shipment viewing is first made available to the network transport carrier by the load or shipment's destination area code zone. This enables the network transport carrier to compete for the load as a backhaul load and offer the shipper, shipper agent or logistical company the best service at the most competitive price. When the terms and conditions of a load or shipment are accepted and a driver, tractor and trailer are assigned, the system automatically removes the shipment from the site. Personnel time and telephone costs by both parties after the transaction has been negotiated are not wasted. CMS also provide to view shipment location tracking information posted by transport carriers. So that the connectivity is established for shippers, shipper agents and logistical companies, supply chains, warehouses and load optimization systems using a variety of electronic media. In this manner CMS satisfies there customer needs with low cost.

3. PROBLEM STATEMENT

3.1 SITUATION ANALYSIS

CMS can be considered as one of the fastest growing trucking companies in South Dakota. CMS has trained support staff participates in all facts of the trucking industry. CMS has used Information technology to the maximum extent to facilitate this rapid growth. CMS provides a wide variety of support and training services for the customers. CMS also has different levels of training packages to work with the client company's one on one with a training technician. The sale representative and support staff record and track of all problems faced in trucking industry. Depending on the records, CMS department planned to develop a site for shippers, shipper agents and logistics companies to view network carriers' available equipment and load capacities available on the site (shippernet). Using computer software and Internet Technologies the shippernet site network will be divided into 285 telephone area code zones with transport carriers providing transportation services in every zone.

3.2 PROBLEM DEFINITION

Shippers and agents will go to carriers for equipments, the problem with this approach is that many times the carries will not have proper equipment or the shipper doesn't have enough information about the carries. And also shippers will also face lot of cost in the form of personnel time and telephone calls.

Instead of Shippers, agents going to carriers for getting loads and equipments this shipper net web site directly provides a national network of transport carriers that shippers, agents and logistical companies can directly connect for matching shipments with available equipment capacities. This site is developed to provide a single site to view network carriers' available equipment capacities and to maintain an interactive site to save personnel time and telephone costs and provide the network with computer and Internet software to keep load and equipment information continually updated as events are occurring. Using computer software and Internet Technologies the shippernet site network will be divided into 285 telephone area code zones with transport carriers providing transportation services in every zone.

3.3 PROJECT DELIVERABLES

- A database to maintain shippernet information.
- A simple and easy to use web based system which enables online insertion of data, online analysis, and user authentication.
- User Manual for Editor which provides detailed instruction on maintaining the website.
- A web-based system which assists shippers, shipper agents and logistical companies to electronically connect to the Network shipment postings, view equipment capacities, negotiate with network transport carriers.
- Project report to be submitted as part of partial fulfillment of MSIS program at DSU.

4. PROJECT SOLUTION

Based on the situation analysis CMS decided to develop a web based Load and equipment capacities viewing for the carriers. The following are the requirements undertaken to develop the site (shippernet).

- To provide a national network of transport carriers where shippers, shipper agents and logistical companies can directly connect for matching shipments with available equipment capacities.
- To provide a single site to view network carriers' available equipment capacities.
- To maintain an interactive site to save personnel time and telephone costs.
- To allow network carriers keep load and equipment information continually updated as events are occurring.
- To centralize all loads and equipments in one site so that different offices of one company can keep track of their capacities.

Taking all the above into consideration the project was developed to a level where it could be implemented as a product that helps trucking businesses enhance their operations and allows a better means of handling capacities.

WEB BASED FLEXIBILITY

- Shippernet web-based platform ensures no need for searching loads and equipments where they are located.
- Customers can negotiate loads easily.

- Loads and equipments can be searched easily on web-based platform.
- Access loads and equipments information anywhere and at anytime.
- Have an unlimited number of concurrent users access your business information.
- Reference activity logs for analysis.
- Transmit and store data securely.
- Submit, view and search loads and equipment options.

SEARCH OPTIONS

Shippernet provides powerful search tool in a simple web browser. Users can use this function for finding any load or equipment is present in particular state or city and location, and a number of other characteristics.

SCALABILITY

As CMS experience business growth, Shippernet web based platform can be easily scaled to fit CMS needs.

COST AND TIME EFFECTIVE

The shippernet being web based gives the organization the flexibility to submit the loads and equipments from anywhere in world, thus saving both time and money for organization. One of the major advantages of this software being web based is the quick rollout of the equipment and loads tracking information for different companies in different places, as well as the product's simplicity and minimal training requirements.

5. BUSSINESS PERSPECTIVE PHASE

This Shippernet site provides small and medium-sized businesses with a fast and easy way to get started viewing loads and equipments present in different places. Businesses could access information at any time from anywhere. First, the site (or the information system) starts with a basic idea based on the problems encountered in the trucking industry. Second, this idea is transformed into a simple drawing that is shown to the customer and refined until the customer agrees that the picture depicts what they want. Third, a set of blueprints is designed that present much more detailed information about the site. Finally the site is built following the blue prints. All these approaches come together to build shippernet site.

The SDLC fundamentals are used to build the project in the above-mentioned sequence. The four fundamental phases of the SDLC are:

- Planning
- Analysis
- Design
- Implementation

5.1 PLANNING

The planning, which I consider as most important stage for any project, has played a vital role in a successful implementation of the Shippernet site.

The planning stage included:

- Business Requirements
 - Problem statement analysis
 - Identifying the factors as to why build the system and what is value addition of the new system.
- Feasibility Analysis
 - Technical feasibility: Do we have resources to implement the project?
 - Economic feasibility: Do we have time and money?
 - Organizational feasibility: How will it improve the process in the organization?
- Work Plan Development
 - Task identification.
 - Estimating the time line.
- Scope of the Project
 - Refining estimates
 - Managing the scope of the project.
 - Mitigating the risks involved.

The project completely differs from the existing system. The existing system uses manual approach but the proposed project uses modern technology for conducting the operations so that loads can enter manually from the Internet as well as from truck win

software. So the project provides an opportunity for the customers to view the loads and equipments from the Internet and their can call or email the particular users regarding the equipment.

5.2 ANALYSIS

Gathering the input from various employees in CMS was considered for a better understanding of what the system needed to perform. Considering the top management, questions were asked like

- How to develop the project?
- When to develop the project?
- What processes need to be automated to enable a better standard of business?
- Where to develop the project?
- What kinds of features are most required?

The employees were considered as they would be the end users entering loads and equipments into the system, would be people effectively using the project management techniques to analyze the situation of a project and would eventually be able to report effectively to the top management. Used entity relationship diagrams that are initial step to understand the business rules associated with the project, same for mapping the database design too.

5.3 DESIGN

The design phase is divided into

- Interface Design
- Database Design
- Server Architectural Design
 - Hardware
 - Network Considerations.
- Program Design

The database design is a crucial aspect of the project as an organized data could provide way to communicate data in the form required. The conceptual model is the following,

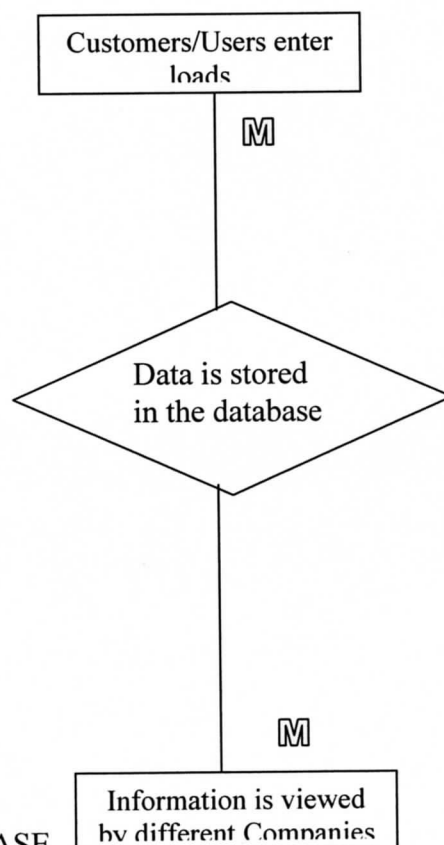


Figure 5-1 DESIGN PHASE

5.4 IMPLEMENTATION

Project Implementation phase involved programming, testing, installing, training and identifying maintenance techniques.

5.5 PROJECT MANAGEMENT CONSIDERATIONS

Good Project Management is the key for the successful deployment of projects. CMS, Inc claims that using project management grants the following advantages:

- Higher quality and increased reliability.
- Lower costs.
- Shorter development times.
- High profit margins.
- Improved Productivity.
- Better control of financial, physical and human resource.
- Improved operations
- Better internal co-ordination.
- Higher work morale.

Project management helped to oversee limitations attributed to project scope, time and cost dimensions and it also provided a perfect balance between the above mentioned constraints and in turn resulting in successful deployment of the project. For this project WBS (Work Break down structure) and Gantt chart are Project Management tools.

5.6 WBS (WORK BREAKDOWN STRUCTURE)

Work Breakdown Structure is the spine of the project plans. It is not a "To Do" list of every possible thing we can think of that needs to be done in the project. Rather it is the assignments we will hold members of the project team accountable for delivering. As a result, developing an effective work breakdown structure requires a great deal of thinking, not just writing down everything we can think of for people to do. A WBS is often depicted as a task oriented family tree of activities. It can also be organized using the project management process groups. It looks like an organizational chart, which can help people visualize the whole project and all of its main parts. Below is the WBS plotted at the beginning of the project?

The WBS helps to divide the project into short and concise miles stones, creating a series a small scale wins and in turn a successful deployment.

1. Project analysis

1.1. Problem identification

1.2. Gathering general information

1.3. Requirement identification

1.4. Define Goals & functionality

1.5. Develop planning document

1.6. Prepare a final execution plan

2. Project Design

2.1. Shipper interface design

2.1.1. List all possible layouts

2.1.2. Compare the pros and cons

- 2.1.3. Select the best layout
 - 2.2. Database design
 - 2.2.1. Design the relational schema
 - 2.2.2. Develop E-R diagrams
 - 2.3. Carrier interface design
 - 2.3.1. List different layouts
 - 2.3.2. Compare pros and cons.
 - 2.3.3. Select the best layout
 - 2.4. Identify system requirements.
 - 2.5. Finalize and close the design and requirements**
- 3. Project Development
 - 3.1. Provide required systems
 - 3.2. Create Shipper interfaces
 - 3.3. Create carrier side scripts
 - 3.4. Create database
- 4. Project Testing
 - 4.1. Test the database for bugs
 - 4.2. Test the database performance
 - 4.3. Test the shipper scripts
 - 4.4. Test the carrier scripts
 - 4.5. Test web server performance
 - 4.6. Test the WebPages**
- 5. Project Evaluation and completing

5.1. Prepare documentation

5.2. Launch the system

5.3. Project presentation

5.4. **Project Report**

5.5. **Identify efficient maintenance techniques**

5.7 GANTT CHART

Gantt charts are useful tools for planning and scheduling projects. It lays out the order in which tasks need to be carried out and helps to manage the dependencies between them. Gantt charts determine the resources needed. It allows assessing how long a project should take. When the project is under way Gantt charts monitor the progress allows seeing what should have been achieved at a point in time.

For developing the project (shippernet) the Gantt chart is the primary tool to communicate project schedule information. Gantt charts allow you to see how remedial action may bring the project back on course. Gantt chart can also display actual time it took to complete each task, which help me measure performance along the project build. Below is the Gantt chart plotted for the project?

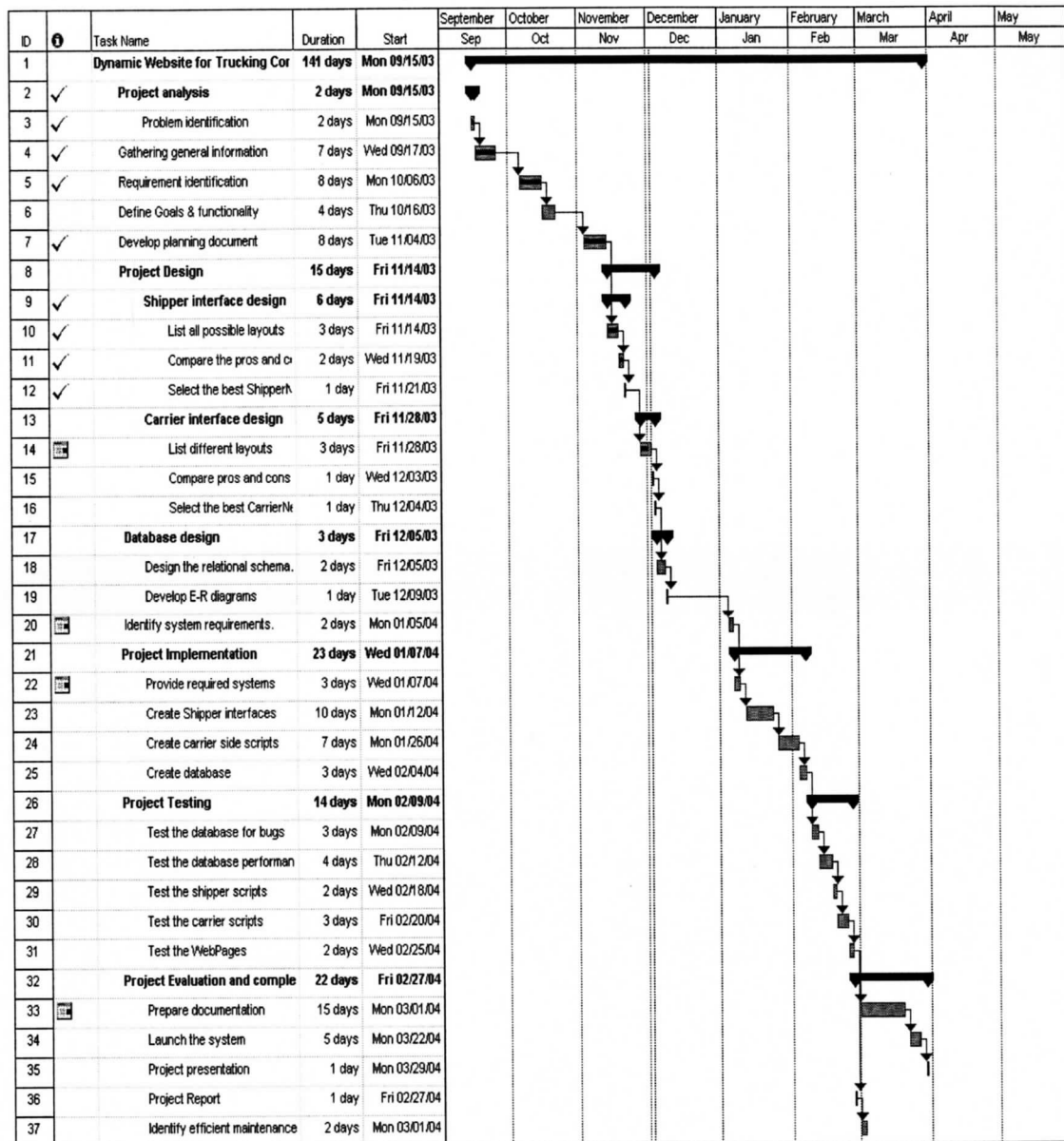


Figure 5-2 GANTT CHART

6. TECHNOLOGY OVERVIEW

Overview of Technologies

The technical details of the shippernet site are presented below:

- Client-side scripting Language: Java Script
- Server-side scripting Language: VB Script
- Client/Server technology:
 - ASP Request and Response objects, to communicate with the web client.
 - ASP Session object, to manage a user session.
 - ADO CONNECTION and RECORDSET objects, to manipulate information contained in a database.
- Database Server: Microsoft SQL Server 2000.
- Web Server: IIS
- Graphical tools: Flash, Fireworks.
- Other Tools Used: Front Page, Dream Weaver

The reason to choose these technologies in this project is that it can be implemented at the lowest cost as CMS current technical infrastructure compliments very well.

6.1 CLIENT / SERVER TECHNOLOGY

Active Server Pages (ASP) is a great tool for creating dynamic web pages. ASP is a Microsoft technology, and it works by allowing us the functionality of a programming language; we write programming code that will generate the HTML for the web page dynamically. So, whenever a user browses to our web site and requests one of our ASP pages, the ASP code is processed at that time by a special piece of software – the web server. This processing generates the HTML, which is then passed to the browser and used to create the page itself, on the user's screen.

The power of ASP lies in two facts: first, the HTML is not created until the user wants to see the web page, and second, it doesn't care what web browser is being used. ASP isn't the first technology to offer these features, but it is undoubtedly one of the most powerful and widely used in industry; and crucially, it's one of the fastest. Active Server Pages is different from many Microsoft technologies in the following respect: while ASP must be executed on a computer that supports it, we can view ASP – driven web pages from any computer, and with any modern browser.

So why did we choose ASP? Well, ASP brings its ability to create pages that are sensitive to factors such as time and place, and the user's identity and previous choices and actions. In other words it would allow us to customize our web pages to the specific needs of each individual user.

Here is the comparative procedural analysis of a static page versus a dynamic page created by ASP (client server technology),

STATIC PAGES

Steps involved for a pure HTML page to make its way to the Client browser

- A web author writes page composed of pure HTML, and saves it within an .htm file
- Sometime later, a user types a page request into their browser, and the request is passed from the browser to the web server
- The web server locates the .htm page
- The web server send the HTTP stream back across the network to the browser
- The browser processes the HTTP and displays the page

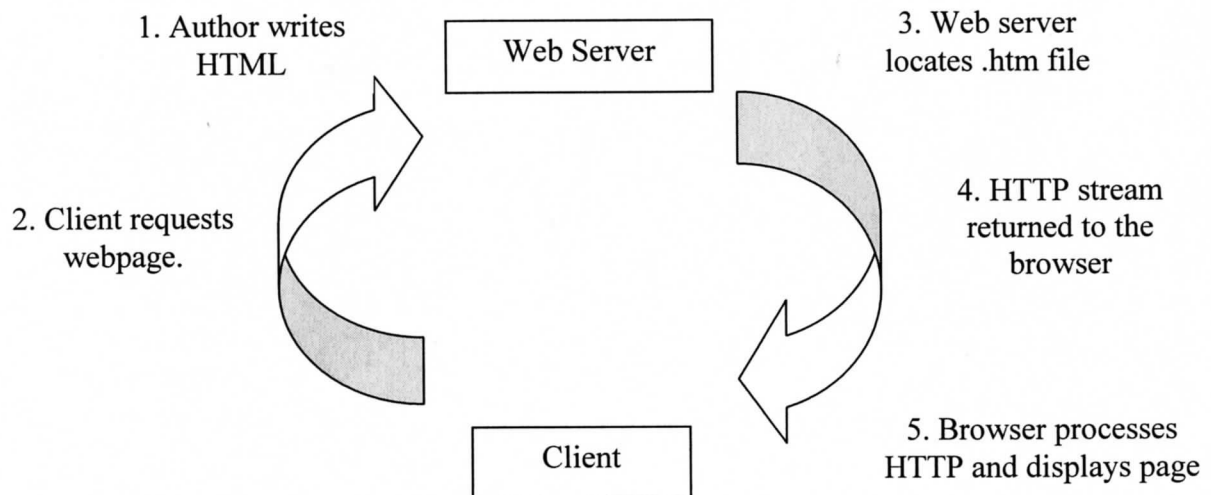


Figure: 6-1 STATIC PAGE DESIGN

DYNAMIC PAGES

Steps involved for an .asp page to render HTML to the Client browser

- A web author writes a set of instructions for creating HTML, and saves these instructions within a file
- Sometime later, a user types a page request into their browser, and the request is passed from the browser to the web server
- The web server locates the file of instructions
- The web server follows the instructions in order to create a stream of HTTP.
- The web server send the newly-created HTTP stream back across the network to the browser
- The browser processes the HTTP and displays the page.

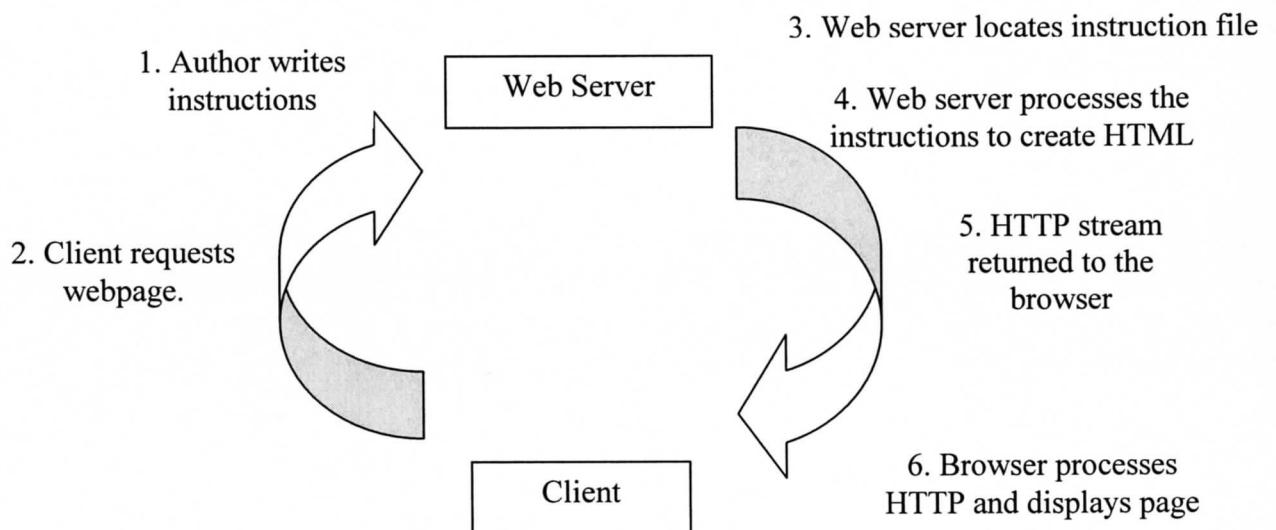


Figure: 6-2 DYNAMIC PAGE DESIGN

6.2 WEB SERVER

It is the special piece of software running on a computer that distributes web pages to users on demand, and provides an area in which to store and organize the pages of a web site. The machine that runs the web server software could be a remote machine sitting at the other side of your network, or even on the other side of the world, or it could be your very own home machine. Basically it creates a **client-server relationship** where the browser on the client machine is being the client and the web server acting as the server. This relationship describes the distribution of tasks between server (which stores, processes and distributes data, like an ATM or cash point machine) and the clients that access the server (like customers queuing to get their money out), in order to achieve universal access for the network on which they are connected. The client-server scenario is also commonly known as the **two-tier system / three-tier system**.

6.3 DATABASE: SQL SERVER 2000

Microsoft SQL Server 2000 is a relational database management system (RDBMS). A relational database provides a means of organizing data by storing it in database tables. Related data can be grouped into tables, and relationships can be defined between tables as well thus the name, relational database. Users access the data on the server through an application. Administrators access the server directly to perform configuration, administrative, and database maintenance tasks. SQL server is a scalable database, which means that it can store substantial amounts of data and can support many users accessing the data at the same time.

Users access the database server through applications on their client computers or through applications running on a separate computer known as the application server. Considering the two options in accessing the database server, we had to go with the second as the client (users) in our case are limited by networking issues. So the client's computer's only task is running the HTML code to request functions from the application server (web server that processes the .asp instructions) and then displaying the results. This type of a client is called a *thin client*. The application server runs an application to perform the business logic; this application is multithreaded, meaning many users can access it simultaneously. The application server makes connections to the database server to access data and returns the results to the client.

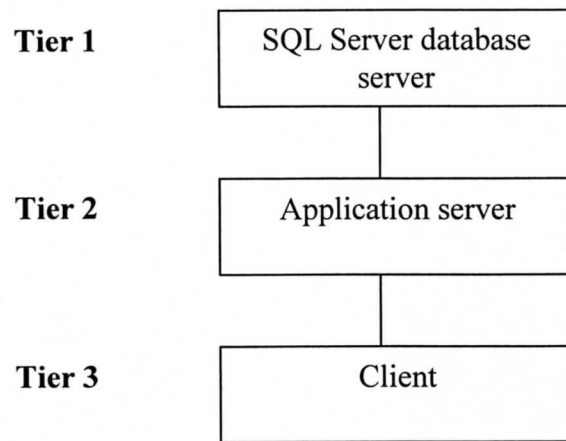


Figure: 6-3 3 TIER MODEL

6.4 DATABASE DESIGN AND SETUP

For storing and retrieving loads and equipments information we need to support some form of data storage. For the purpose of storing and retrieving information we used Microsoft's SQL server relation database to store all of the application's data. In this section we'll look at how to set up the database tables that will support the shippernet site. First of all the steps involved in developing this project is:

- Install SQL server 2000 on box-a provided by CMS web hosting.
- Install IIS 5.0 web server on box-b provided by CMS web hosting. The procedure for installing IIS 5.0, which is bundled with Windows 2000 operating system, is as follows.
- Go to the control panel (Start | Settings | Control Panel) and select the Add/Remove Programs icon. The following dialog will appear, display a list of your currently installed programs:

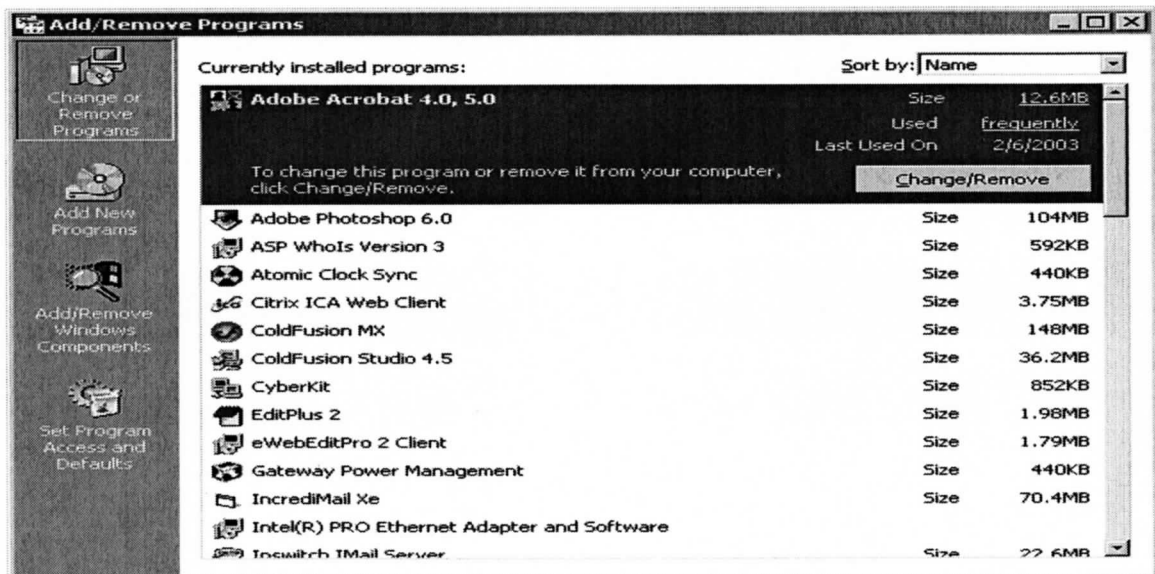


Figure: 6-4 DATABASE SETUP

- Select the Add/Remove Windows Components icon on the left side of the dialog, to get to the screen that allows you to install new windows components.

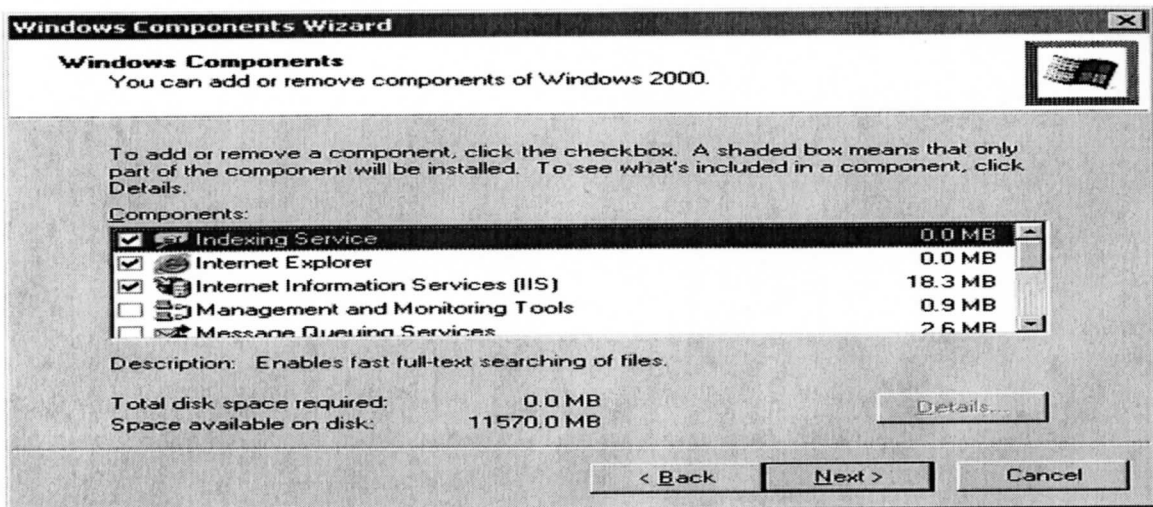


Figure: 6-5 DATABASE SETUP

- Locate the Internet Information Server (IIS) entry in the dialog, and note the checkbox that appears to its left. Unless you installed Windows 2000 via a custom install and specifically requested IIS, it's most likely that the checkbox will be unchecked.
- If the checkbox is cleared, then place a check the checkbox, and click on Next to load Internet Information Services 5.0 and Active Server Pages. You might be prompted to place your Windows 2000 installation disk into your CD-ROM drive. It will take a few minutes to complete.
- Register a domain namely <http://www.shippernet.com> with Local link.
- Obtain a Secure certificate (SSL – 128 bit encryption) from Local link, certificate issuing company.
- Check to see all the users are plugged on to the Internet to access box-a through box-b for the functioning of the system.

After installing all the form we choose for storing the data, the physical storage is complemented by a logical description of the way information is stored. This logical description is known as database design; this is represented below as an Entity Relationship diagram.

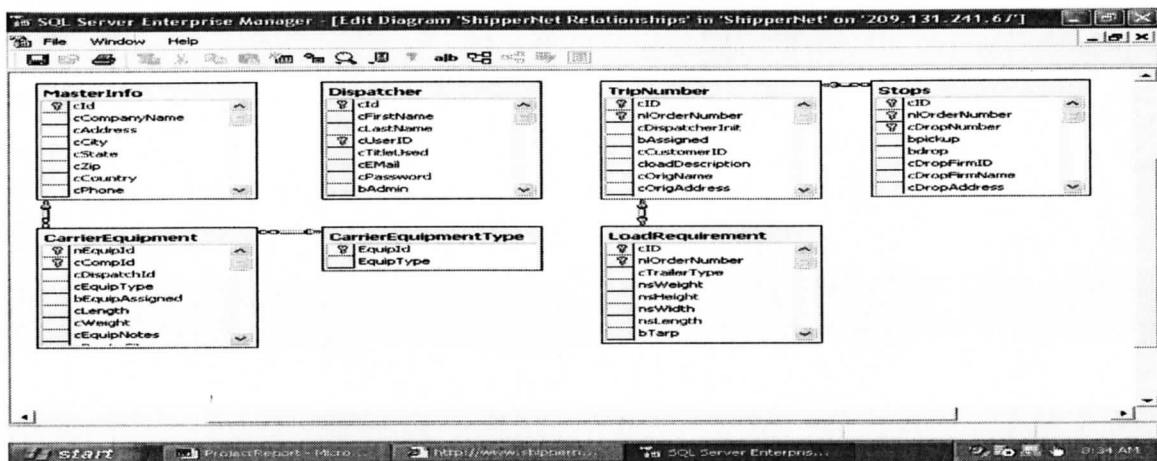


Figure: 6-6 ER DIAGRAM

The ER Diagram consists of the tables that store the information, as well as the relationships that these tables have with each other. Let's look at the different data tables used for the development of this project and see what type of information can be stored in each. The table and views involved for the project are the following

THE MASTER INFO TABLE

Master info table store the information of all users in the shippernet site. This table is the main table for all the pages in the sites. This table contains all the companies' information like address, contact info. This table also provides whether the company is a shipper, shipper agent or a transport carrier.

Column Name	Data Type	Length	Allow Nulls
cCompanyName	varchar	8	✓
cAddress	nvarchar	50	✓
cCity	nvarchar	160	✓
cState	nvarchar	22	✓
cZip	nvarchar	2	✓
cCountry	nvarchar	10	✓
cPhone	nvarchar	6	✓
cFax	nvarchar	40	✓
cType	nvarchar	20	✓
cContact	varchar	1	✓
cComment	nvarchar	50	✓
cArea	nvarchar	200	✓
cSoftware	nvarchar	3	✓
dCreated	nvarchar	2	✓
bmInactive	smalldatetime	4	✓
nCount	bit	1	✓
cWebsite	int	4	✓
cEmail	varchar	70	✓
cUSDOT	varchar	80	✓
cMCMX	varchar	8	✓
bPrivateNetwork	varchar	8	✓
demo	bit	1	✓

Figure: 6-7 MASTER TABLE INFO

DISPATCHER TABLE

Dispatcher Table is linked with the master table where it stores all the user ids, company ids and password. This table has a field for one email only with this field daily carriers are send email daily at 9a.m, 10a.m and 3p.m say that loads and equipments are present in the shippernet site. These emails are sending by an SQL Procedure.

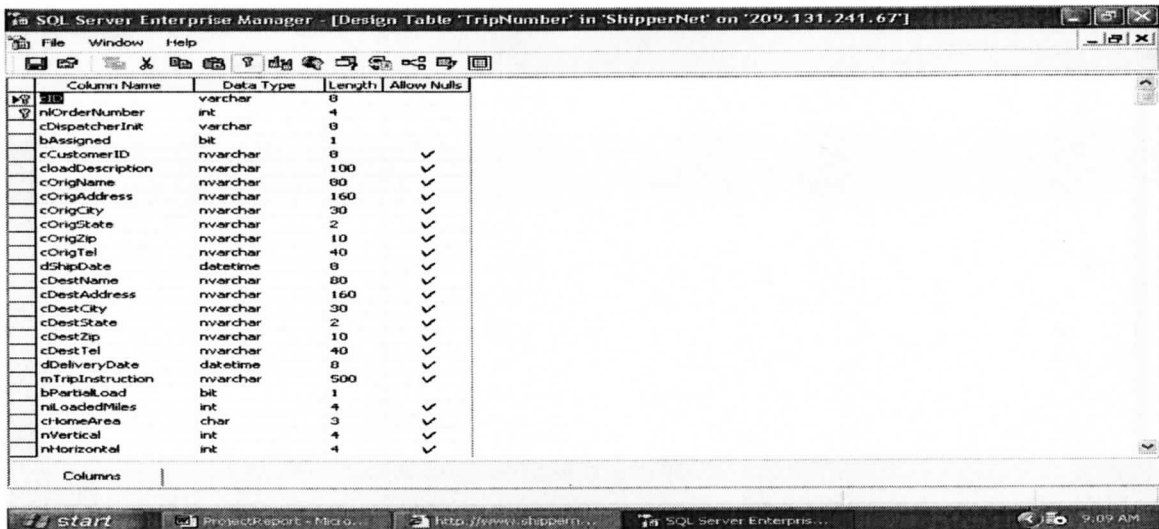
Column Name	Data Type	Length	Allow Nulls
cFirstName	varchar	8	✓
cLastName	varchar	15	✓
cUserID	varchar	30	✓
cTitleUsed	varchar	8	✓
cEmail	varchar	20	✓
cPassword	varchar	50	✓
bAdmin	varchar	8	✓
cPhone	bit	1	✓
bInactive	varchar	40	✓
no_email	bit	1	✓
OneEmailOnly	bit	1	✓
PrivateNetworkEmail	bit	1	✓

Property	Value
Description	
Default Value	(0)
Primary	0
Scale	0
Identity	No
Identity Seed	
Identity Increment	
Is Row GUID	No
Formula	
Collation	<database default>

Figure: 6-8 DISPATCHER TABLE

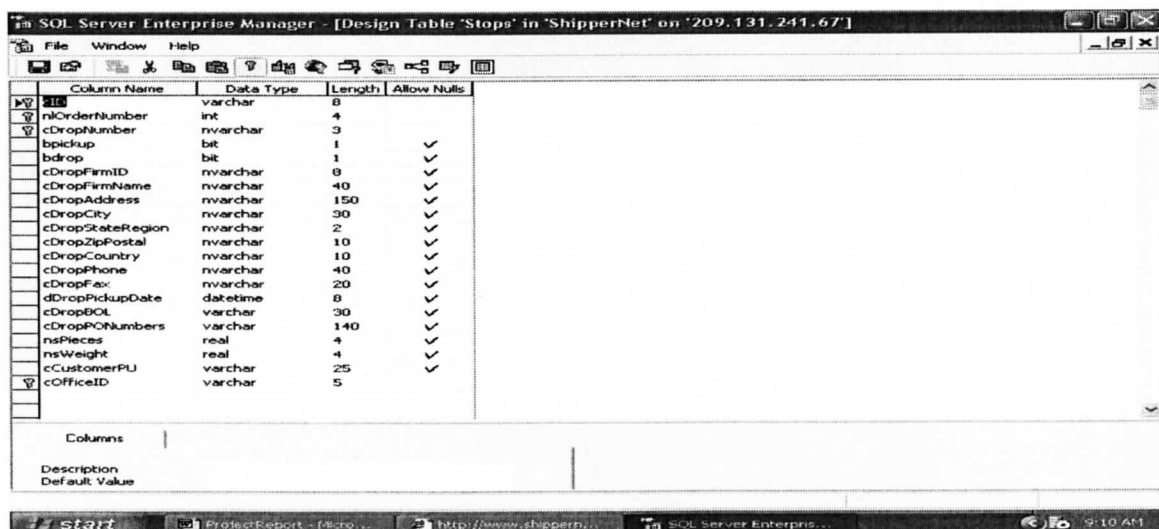
TRIP NUMBER TABLE

This table stores the information of all the loads present in the shippernet site. This table is linked with load requirement table and stops table. Load requirement table contains the load information like capacity, weight, and height. Stops Table contains the stops of the load like how many stops are made for the load. The following are table design.



Column Name	Data Type	Length	Allow Nulls
id	varchar	8	
nlOrderNumber	int	4	
cDispatcherInit	varchar	8	
bAssigned	bit	1	
cCustomerID	nvarchar	8	✓
cloadDescription	nvarchar	100	✓
cOrigName	nvarchar	80	✓
cOrigAddress	nvarchar	160	✓
cOrigCity	nvarchar	30	✓
cOrigState	nvarchar	2	✓
cOrigZip	nvarchar	10	✓
cOrigTel	nvarchar	40	✓
dShipDate	datetime	8	✓
cDestName	nvarchar	80	✓
cDestAddress	nvarchar	160	✓
cDestCity	nvarchar	30	✓
cDestState	nvarchar	2	✓
cDestZip	nvarchar	10	✓
cDestTel	nvarchar	40	✓
dDeliveryDate	datetime	8	✓
mTripInstruction	nvarchar	500	✓
bPartialLoad	bit	1	✓
nlLoadedMiles	int	4	✓
chomeArea	char	3	✓
nVertical	int	4	✓
nHorizontal	int	4	✓

Figure: 6-9 TRIP NUMBER TABLE



Column Name	Data Type	Length	Allow Nulls
id	varchar	8	
nlOrderNumber	int	4	
cDropNumber	nvarchar	3	
bpickup	bit	1	✓
bdrop	bit	1	✓
cDropFirmID	nvarchar	8	✓
cDropFirmName	nvarchar	40	✓
cDropAddress	nvarchar	150	✓
cDropCity	nvarchar	30	✓
cDropStateRegion	nvarchar	2	✓
cDropZipPostal	nvarchar	10	✓
cDropCountry	nvarchar	10	✓
cDropPhone	nvarchar	40	✓
cDropFax	nvarchar	20	✓
dDropPickupDate	datetime	8	✓
cDropBOL	varchar	30	✓
cDropPONumbers	varchar	140	✓
nsPieces	real	4	✓
nsWeight	real	4	✓
cCustomerPU	varchar	25	✓
cOfficeID	varchar	5	✓

Figure: 6-10 STOPS TABLE

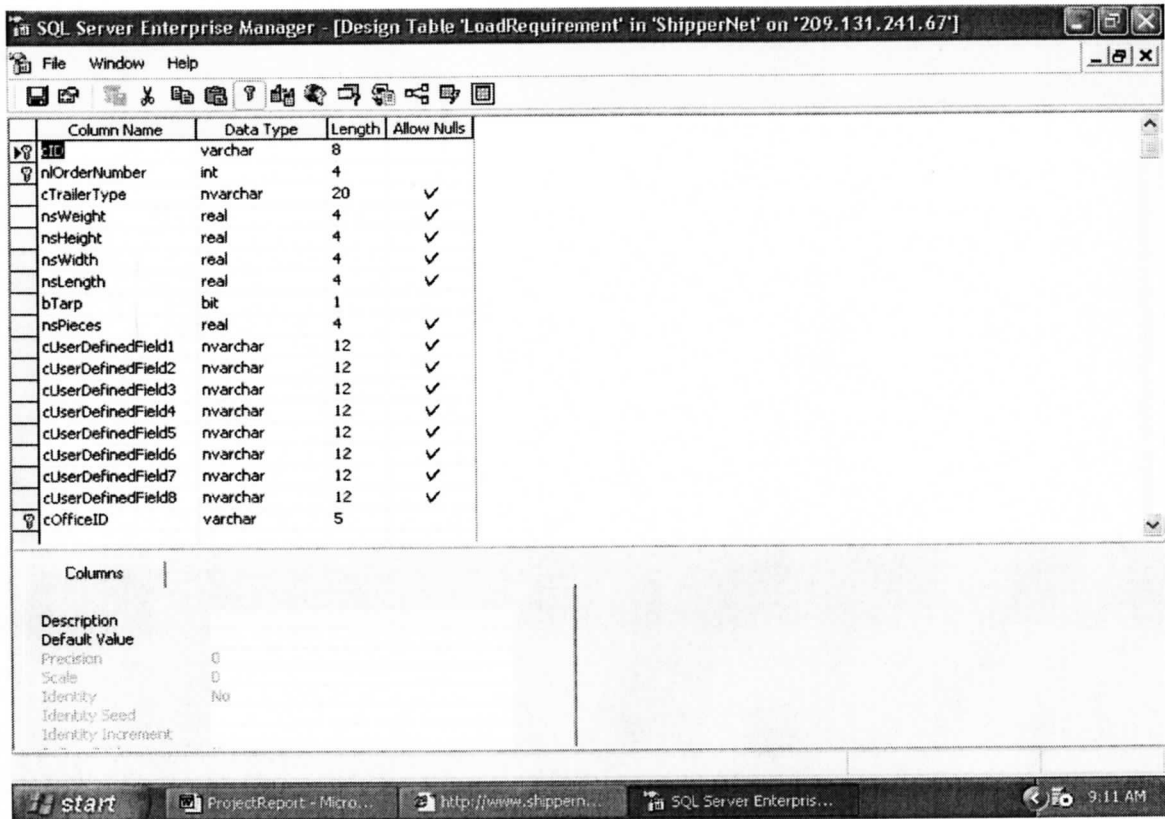


Figure: 6-11 LOAD REQUIREMENTS TABLE

LOAD DOWNLOADS TABLE

If a load is downloaded from the site it keeps track of the load-downloaded information like which user downloaded the load and how many time so that the user can reserve the load by changing the color on the site.

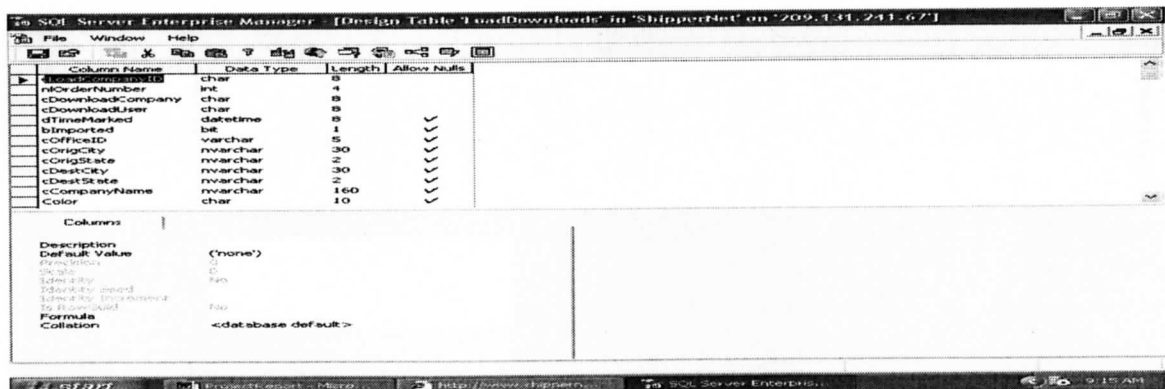
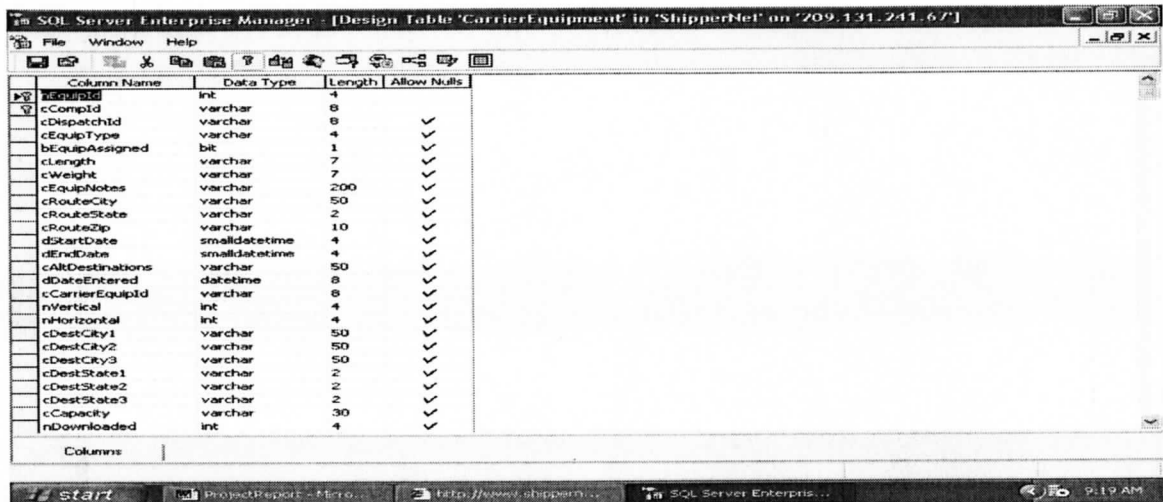


Figure: 6-12 LOAD DOWNLOAD TABLE

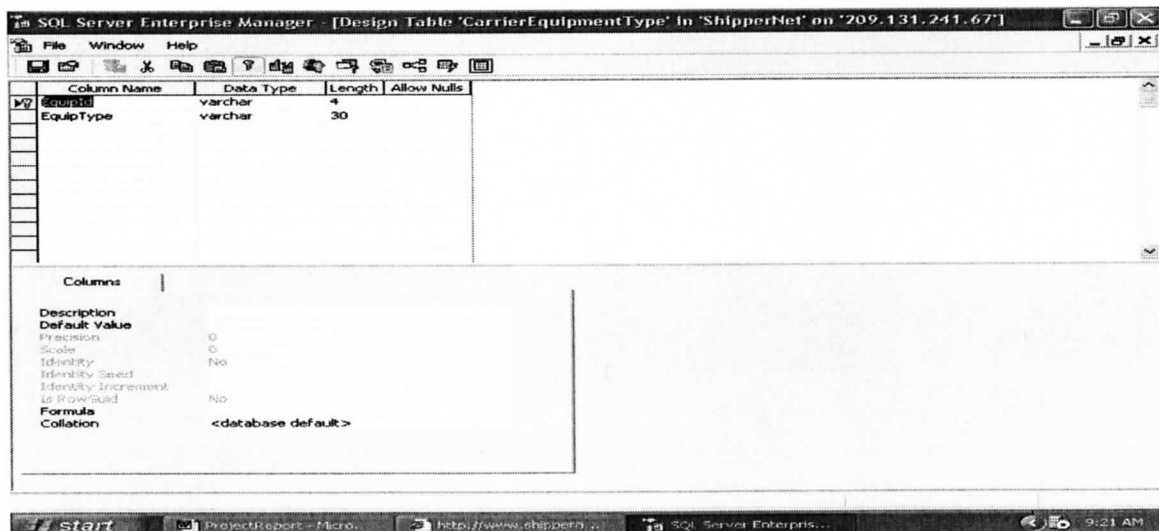
CARRIER EQUIPMENT AND CARRIER EQUIPMENT TYPE TABLES

These two tables store the information of the equipments like its destination, origin, capacity, height and weight and equipment type description. It also stores the information of the reserving equipment.



Column Name	Data Type	Length	Allow Nulls
cEquipId	int	4	
cCompId	varchar	8	
cDispatchId	varchar	8	
cEquipType	varchar	4	✓
bEquipAssigned	bit	1	✓
cLength	varchar	7	✓
cWeight	varchar	7	✓
cEquipNotes	varchar	200	✓
cRouteCity	varchar	50	✓
cRouteState	varchar	2	✓
cRouteZip	varchar	10	✓
dStartDate	smalldatetime	4	✓
dEndDate	smalldatetime	4	✓
cAltDestinations	varchar	50	✓
dDateEntered	datetime	8	✓
cCarrierEquipId	varchar	8	✓
nVertical	int	4	✓
nHorizontal	int	4	✓
cDestCity1	varchar	50	✓
cDestCity2	varchar	50	✓
cDestCity3	varchar	50	✓
cDestState1	varchar	2	✓
cDestState2	varchar	2	✓
cDestState3	varchar	2	✓
cCapacity	varchar	30	✓
nDownloaded	int	4	✓

Figure: 6-13 CARRIER EQUIPMENT TABLE



Column Name	Data Type	Length	Allow Nulls
EquipId	varchar	4	
EquipType	varchar	30	

Property	Value
Description	
Default Value	
Precision	0
Scale	0
Identity	No
Identity Seed	
Identity Increment	
Is RowGuid	No
Formula	
Collation	<database default>

Figure: 6-14 CARRIER EQUIPMENT TYPE TABLE

STATES AND AREA CODE TABLES

These tables' stores the information of all the states, zones and area codes; according to these tables load and equipment are allocated. If any load or equipment present in the area code where the user company is located it give an email for the user saying that a load or equipment is present in the area code zone. These emails are sending using SQL procedures from the server.

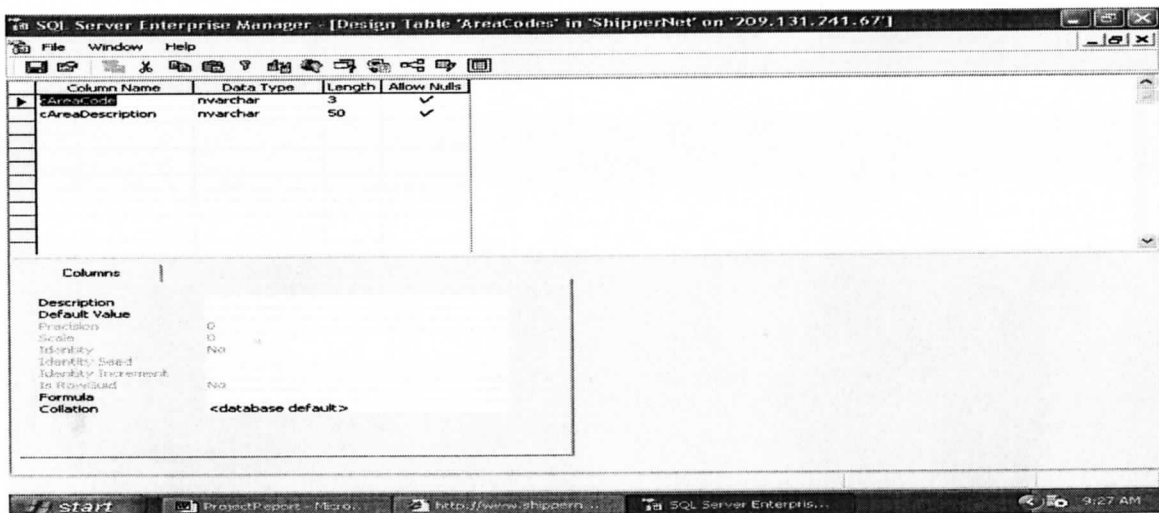


Figure: 6-15 AREA CODES TABLE

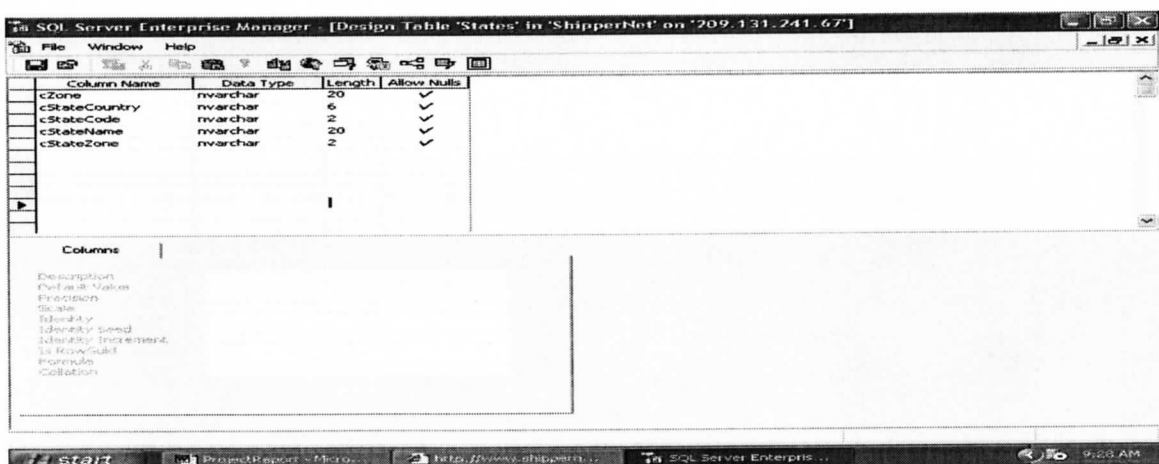
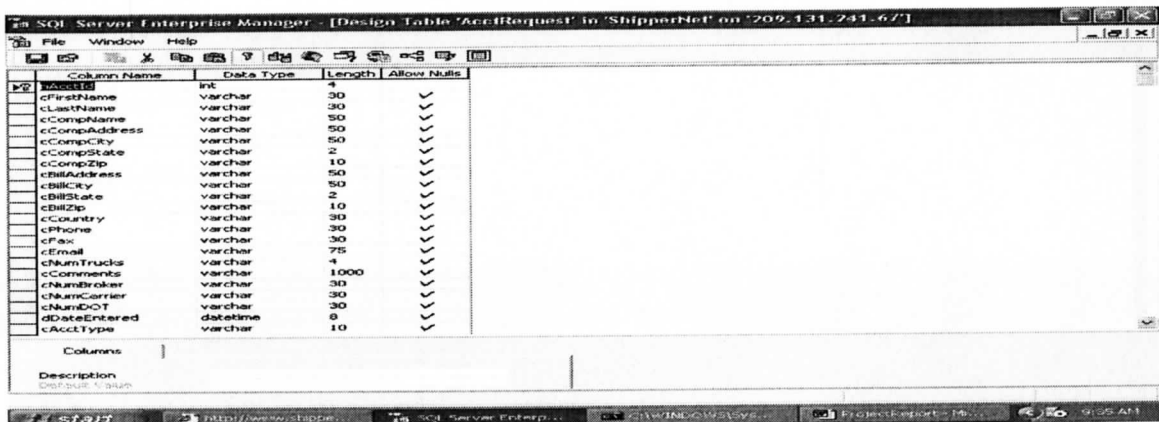


Figure: 6-16 STATES TABLE

ACCOUNT REQUEST TABLE

If any users request and account for shippernet this table stores the information and sends and email to with contents of the information to the admin of the site, so that the information is verified to create and account for the user.

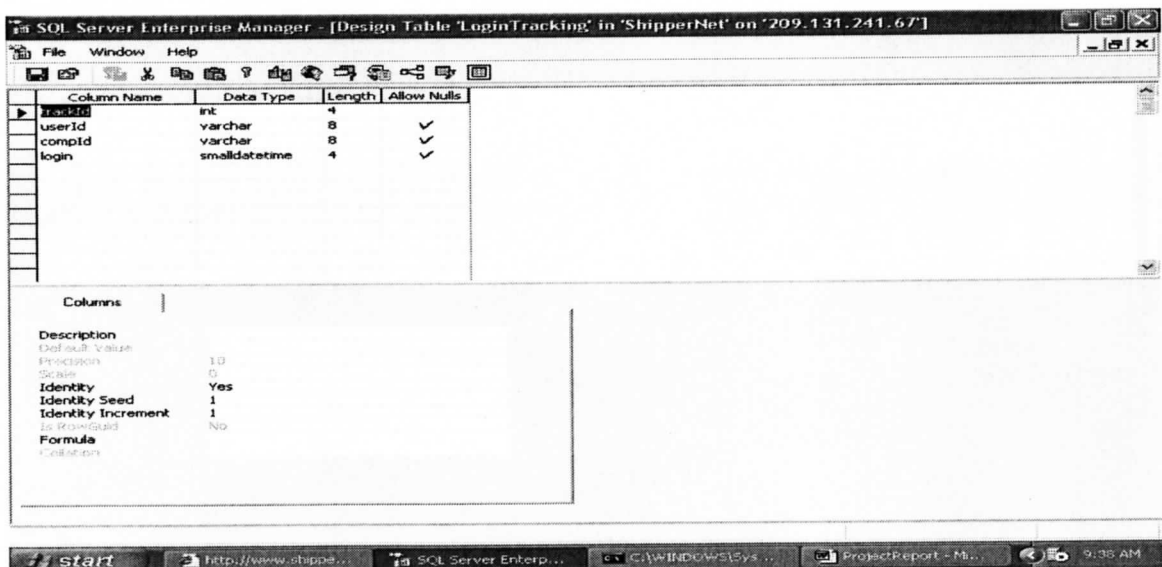


Column Name	Data Type	Length	Allow Nulls
cAcctID	int	4	✓
cFirstName	varchar	30	✓
cLastName	varchar	30	✓
cCompName	varchar	50	✓
cCompAddress	varchar	50	✓
cCompCity	varchar	50	✓
cCompState	varchar	2	✓
cCompZip	varchar	10	✓
cBillAddress	varchar	50	✓
cBillCity	varchar	50	✓
cBillState	varchar	2	✓
cBillZip	varchar	10	✓
cCountry	varchar	30	✓
cPhone	varchar	30	✓
cFax	varchar	30	✓
cEmail	varchar	75	✓
cNumTrucks	varchar	4	✓
cComments	varchar	1000	✓
cNumBroker	varchar	30	✓
cNumCarrier	varchar	30	✓
cNumDOT	varchar	30	✓
dDateEntered	datetime	8	✓
cAcctType	varchar	10	✓

Figure: 6-17 ACCOUNT REQUEST TABLE

LOGIN TRACKING TABLE

This login-tracking table stores how many times the user is logged, so that admin can keep track of it.



Column Name	Data Type	Length	Allow Nulls
LoginID	int	4	✓
UserId	varchar	8	✓
CompID	varchar	8	✓
Login	smalldatetime	4	✓

Property	Value
Description	
Default Value	
Precision	10
Scale	0
Identity	Yes
Identity Seed	1
Identity Increment	1
Is Rowguid	No
Formula	

Figure: 6-18 LOGGING TRACKING TABLE

All the tables were created using the Enterprise Manager of SQL server 2000 and there are SQL procedures too, these procedures will be documented in the coding part.

7. FEATURES OF SHIPPERNET.COM

THE HOME PAGE

The homepage of the application is responsible for directing the Shipper load, Shipper agent and Transport carrier login in the direction they ought to go. The Shipper load, shipper agent, and transport carrier's login links takes the shippers, agents and transport carriers to their login page. This gives the navigation controls to either of the users for start using the application. Session variables are used to maintain user status throughout the application. In the main pages we have lots of features like load location information, account request info, financial management information, carrier safety information, credit checks and also transport carriers directory to show the carriers present in the CMS and so many features available in the home page, each one will be described in briefly.

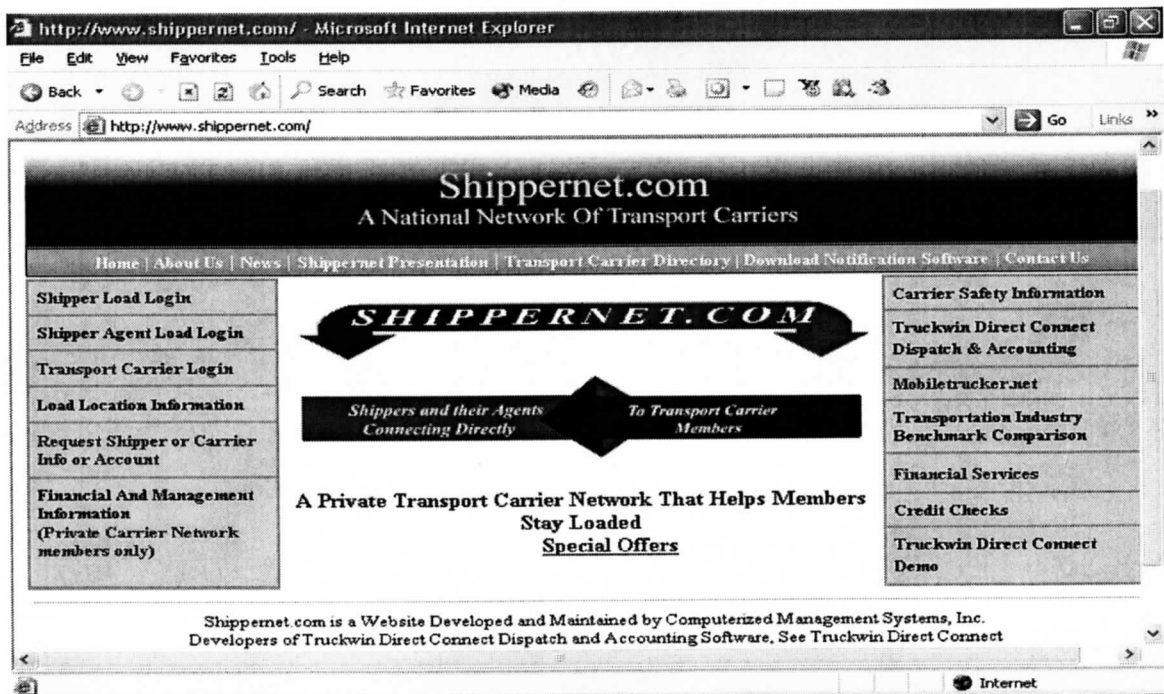


Figure: 7-1 HOME PAGE

SHIPPER LOAD, SHIPPER AGENT LOAD AND TRANSPORT CARRIER LOG IN

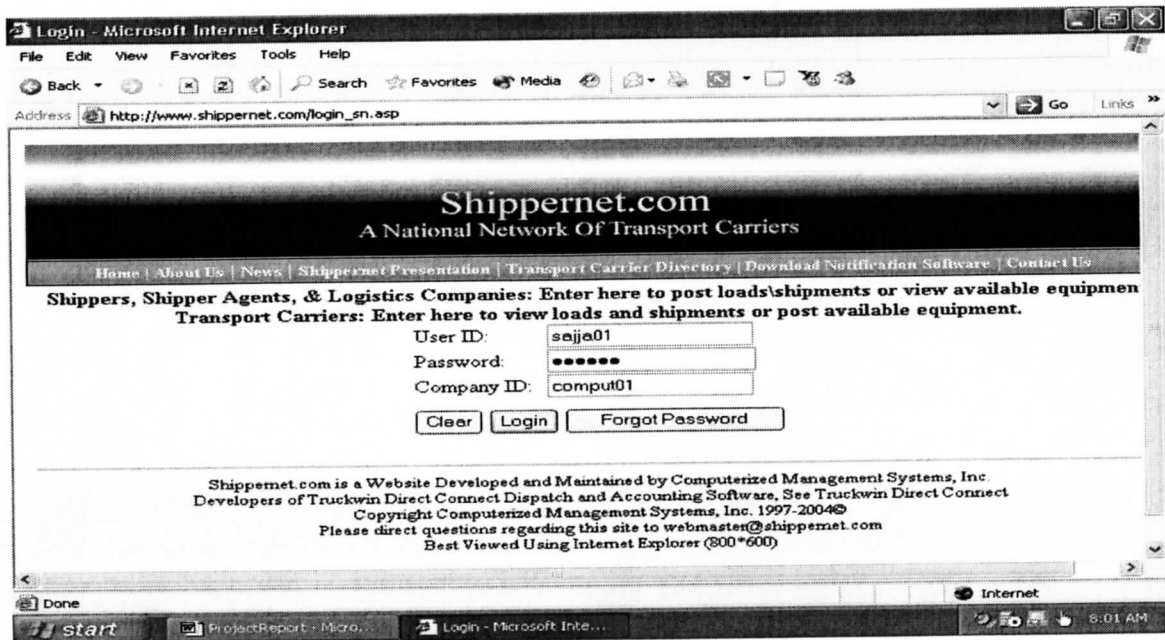


Figure: 7-2 LOGIN PAGE

The above screen shot is that of the login screen for shippers, agents and for transport carriers, which is secures the application. This screen in order to use the application as has to provide the assigned username and password. If the username or password is incorrect it outputs an error message as shown below.

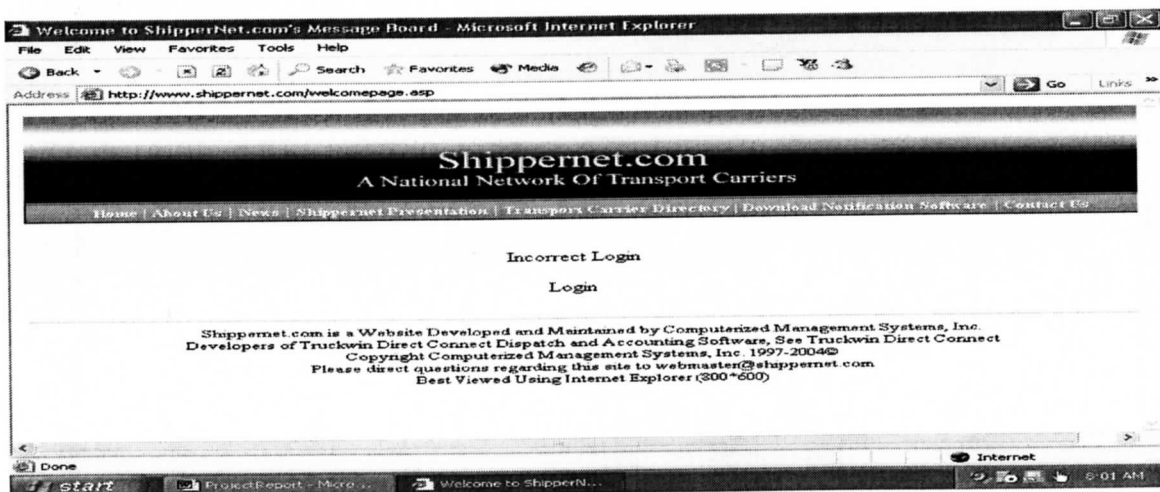


Figure: 7-3 LOGIN PAGE FAILURES

Once login entry is correct it would direct the user to this screen where it gives a welcome page for the user. . This page provides a number of hyperlinks various tasks, which can be performed for the users to view and enter.

This page lists the following links:

- Profiles
- All equipments
- My equipments
- All loads
- My loads
- Search Loads
- Search Equipments

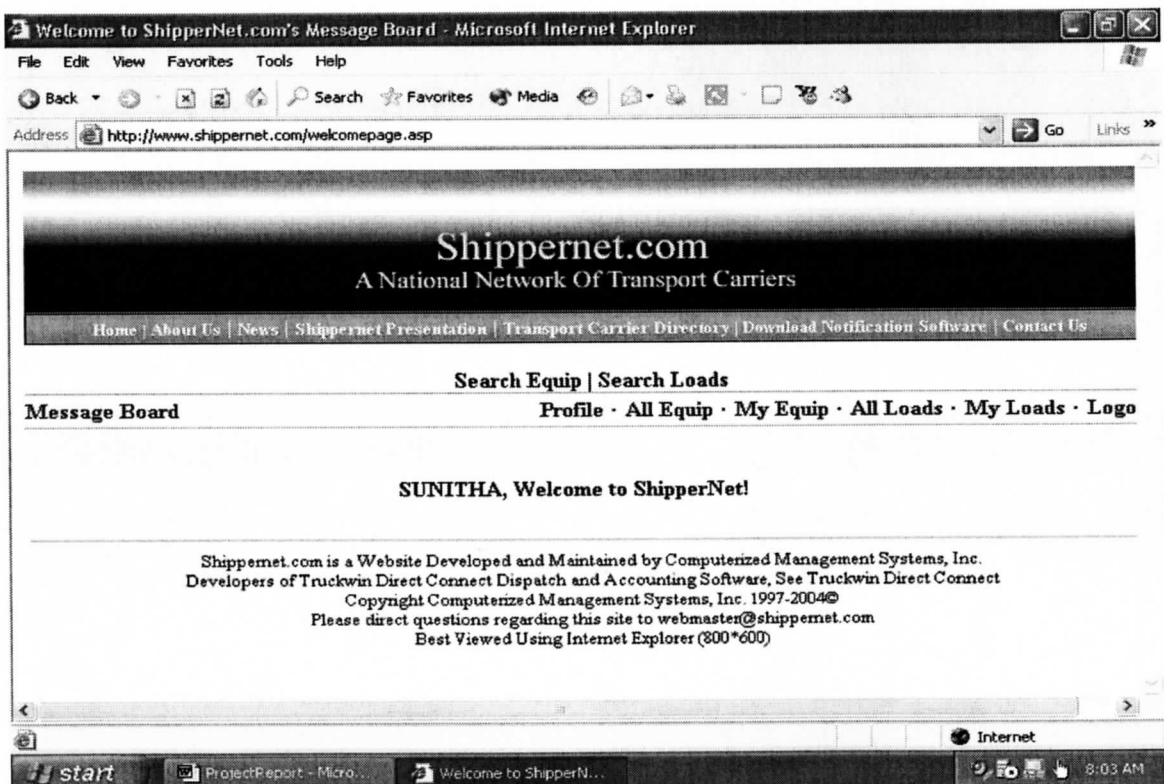
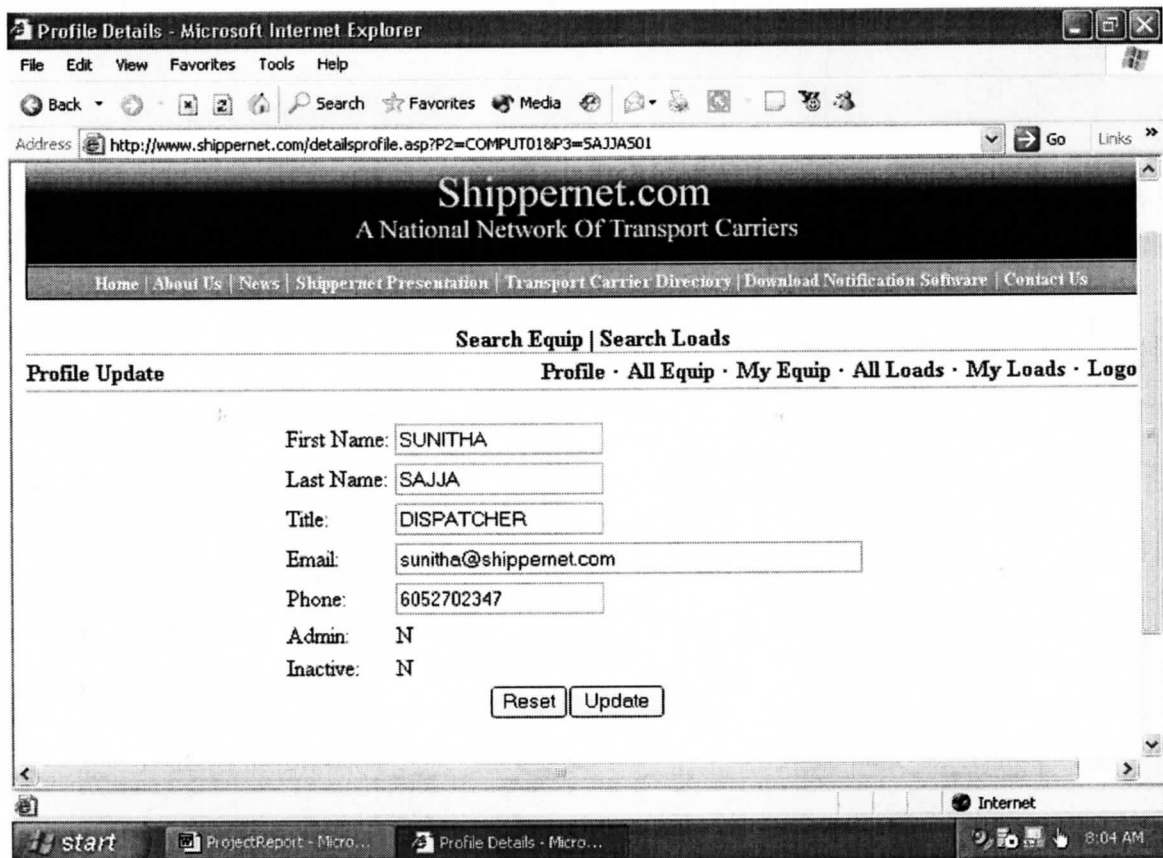


Figure: 7-4 MESSAGE BOARD

PROFILE DETAILS

The profile link in this page takes to profile detail page in which it give the user information which is provided by the user while setting up an account in shippernet. The user can update the information by clicking on the update button. By clicking on reset button it also reset the information.



Profile Details - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Media

Address <http://www.shippernet.com/detailsprofile.asp?P2=COMPUT01&P3=SAJJA501> Go Links

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A National Network Of Transport Carriers

[Home](#) | [About Us](#) | [News](#) | [Shippernet Presentation](#) | [Transport Carrier Directory](#) | [Download Notification Software](#) | [Contact Us](#)

Search Equip | Search Loads

Profile Update [Profile](#) · [All Equip](#) · [My Equip](#) · [All Loads](#) · [My Loads](#) · [Logo](#)

First Name:

Last Name:

Title:

Email:

Phone:

Admin:

Inactive:

Figure: 7-5 PROFILE UPDATE

ALL EQUIPMENTS

All equipment links provides all the equipments provided by the transport carriers, shipper agents in different location. By clicking on to the Ref# no. We can view equipment details like Company name, In Route, Equipment type, Trailer id, Phone number, Capacity and shipping date and ending date of the equipment, which is to be

delivered on time. By seeing these detail information carriers can call for equipments and there is a button for sending an email to network carriers to reserve equipments, after sending the email to network carriers to reserve the equipment it changes the color of the equipment in the row like green for equipment is reserved once by the carrier, yellow for reserved by another carrier second time, red is for reserved by third carrier and finally the equipment is reserved. It just works like traffic signals. You can also do sort equipment by clicking on Start Date, Current Address, and on Alternate Destination. When clicking on equipment type it gives the equipment code description. Below diagrams provides all equipments demonstration.

Shippernet.com
A National Network Of Transport Carriers

Home | About Us | News | Shippernet Presentation | Transport Carrier Directory | Download Notification Software | Contact Us

Search Equip | Search Loads

Equipment Profile · All Equip · My Equip · All Loads · My Loads · Logo

Search Equip

- Click on Ref# no. to View Equipment Details.
- Sort Equipment by clicking on Start Date, Current Address, Alternate Destination.

Equipment Records Returned: 2

Ref #	Equip Type	Start Date	Current Address	Alternate Destination
12380	V53	4/2/04 1:00:00 AM	MEMPHIS, TN	FLORENCE, KY
12386	RF	4/5/04 1:00:00 PM	FAYETTEVILLE, GA	BALTIMORE, MD

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Developers of Truckwin Direct Connect Dispatch and Accounting Software, See Truckwin Direct Connect
Copyright Computerized Management Systems, Inc. 1997-2004©

Sort By Start Date Internet 8:05 AM

Figure: 7-6 VIEWS ALL EQUIPMENTS

Equipment Details - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print

Address http://www.shippernet.com/detailsequip.asp?E1=12380 Go Links

A National Network Of Transport Carriers

Home | About Us | News | Shippernet Presentation | Transport Carrier Directory | Download Notification Software | Contact Us

Search Equip | Search Loads

Ref # - 12380 Profile · All Equip · My Equip · All Loads · My Loads · Logo

Equip

Contact Information			
Company Name:	RYDER SYSTEMS	Phone:	817-490-5809
Equipment Information			
In Route:	MEMPHIS, TN	Trailer Id:	889305
Equip Type:	V53	Capacity:	100%
Start Date:	4/2/04 1:00:00 AM	End Date:	4/5/04 10:00:00 AM
Weight:		Length:	
Other Information			
Alternate Destinations:	FLORENCE, KY		
Notes:	LOC 4023		
Send an email to network carrier to Reserve Equipment			

Done Internet

start ProjectReport - Micro... Equipment Details - M... 8:05 AM

Figure: 7-7 ALL EQUIPMENTS DETAIL INFORMATION

Load Download - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print

Address http://www.shippernet.com/ReserveEquipProcess.asp Go Links

Home | About Us | News | Shippernet Presentation | Transport Carrier Directory | Download Notification Software | Contact Us

Search Equip | Search Loads

Reserve Equipment Profile · All Equip · My Equip · All Loads · My Loads · Logo

To: DAVE_BELTER@RYDER.COM

From: sunitha@shippernet.com

Subject: Reservation For Equipment ID: 12380

Body:

Send Email

Done Internet

start ProjectReport - Micro... Load Download - Mic... 8:05 AM

Figure: 7-8 RESERVE EQUIPMENTS



Figure: 7-9 EQUIPMENT COLOR CODES

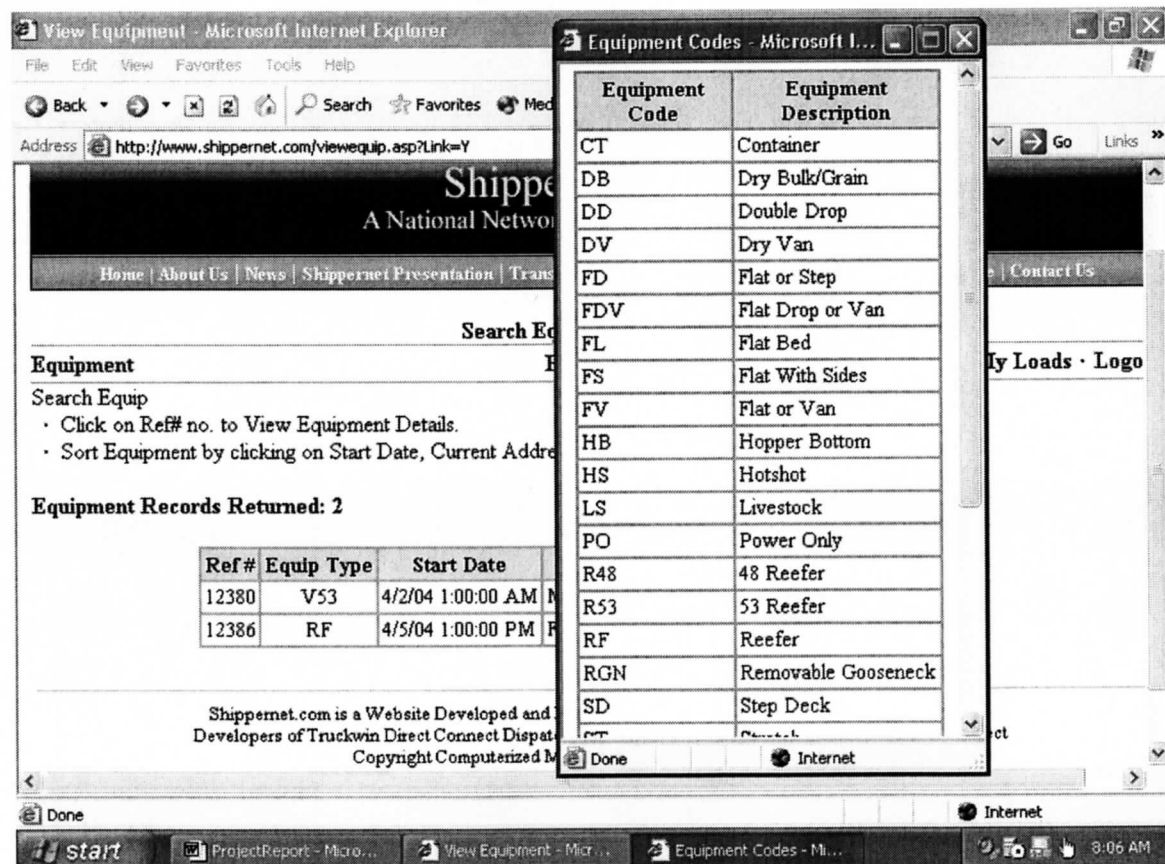


Figure: 7-10 EQUIPMENT CODES

MY EQUIPMENTS

My equipment link provides the information, which is posted by the logged in user (shippers, Agents, and Transport carriers). In which we can also update the information, which is, need to be corrected later and also has a feature for deleting equipment. There are two more links in this page like

- Adds Equipment: Can add single equipment to the board.
- Adds Multiple Equipments: If a company has multiple equipments you also add multiple equipments at once in one screen.

As described in all equipments page above it also has the features like sorting equip type, start date and so on, and same with the Ref# too gives the detail information of the equipment. The following diagrams give the detail information about my equipments.



Figure: 7-11 MY EQUIPMENTS

Equipment Update - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Media Go Links

Address http://www.shippernet.com/Updateequip.asp?E1=12388

Search Equip | Search Loads

Update Ref # - 12388 Profile · All Equip · My Equip · All Loads · My Loads · Logo

View Equipment

Equipment Information			
In Route:	SIoux FALLS	SD	Zip: 57104
Equipment:	CONTAINER	Capacity:	100%
Start Date:	1/2/03	End Date:	1/3/03
Weight:		Length:	
Equipment Description			
Alternate Destinations:	City: MADISON	State: SD	
Notes:	SD		

Reset Update

Done Internet

Start ProjectReport - Micro... Equipment Update - ... SQL Server Enterpris... 8:13 AM

Figure: 7-12 MY EQUIPMENTS UPDATE

Add Equipment - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Media Go Links

Address http://www.shippernet.com/addequip.asp

Equipment Information

Equipment Identification (Unit #): sioux falls

Equipment Type: Container

Capacity: 100%

Trailer Length (partial length): 76 Feet

Available Weight: 87 lbs.

Alternate Destination Cities & Notes: sd

In Route To

City: sioux falls State: sd Zip: 57042

Available Start Date & Time: 01/02/2003 (ex 01/01/2003 12:00 AM)

Available End Date & Time: 01/03/2003 (ex 01/01/2003 12:00 AM)

Alternate Destinations

City: madison State: sd

State/Zone: sd State/Zone: State/Zone:

* Required Fields in Red *

Clear Add Equipment

Done Internet

Start ProjectReport - Micro... Add Equipment - Micro... SQL Server Enterpris... 8:14 AM

Figure: 7-13 ADD SINGLE EQUIPMENT

Add Multiple Equipment - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Media

Address http://www.shippernet.com/addmultiplequip.asp Go Links

Search Equip | Search Loads

Add Multiple Equipment Profile · All Equip · My Equip · All Loads · My Loads · Logo

Remember to use valid equipment codes. Click here to view equipment descriptions.

Equip Type	In Route To City	State	Avail Start Date	End Date	Destination City	State
CT	sioux falls	sd	4/5/04	04/05/2004	madison	sd
CT	madison	sd	4/5/04	04/05/2004	sioux falls	sd
CT			4/5/04			
CT			4/5/04			
CT			4/5/04			
CT			4/5/04			
CT			4/5/04			
CT			4/5/04			
CT			4/5/04			
CT			4/5/04			

Clear Equip Add

Error on page.

start ProjectReport - Micro... Add Multiple Equipme... SQL Server Enterpris... Internet 8:15 AM

Figure: 7-14 ADD MULTIPLE EQUIPMENTS

ALL LOADS

This link lists all loads provided by different carriers presented in different location. This page also has the features like sorting the loads by clicking on origin, destination, start date and ending date when the load should be delivered and when it is to be shipped. It also gives the equipment type and weight of the particular load. When clicking on Load # it takes to different page which gives all the information of the load, the information like company name, phone number, origin, destination, equipment type, weight, it also tells whether load is partial or full load. CMS has software called truckwin32 direct connect which is developed in VB, for this software loads and equipments can also post in to the site. These loads and equipments can be differentiated by saying the load and equipment is entered manually. After 12.00 in the mid night the

loads and equipments will automatically deletes the pervious date's loads and equipments. It also has the coloring for reserving loads as described in equipments.

Search Equip | Search Loads

Loads
 Profile · All Equip · My Equip · All Loads · My Loads · Logo

Search Loads
 · Click on Load# no. to View Load Details.
 · Sort Loads by clicking on Origin, Destination, Shipdate.

Load Records Returned: 42

Load #	Origin	Destination	Ship Date	Weight	Equip Type
CARGOM01.935101745	CENTREVILLE, MD	SPRINGFIELD, MO	4/5/04	0	R
CARGOM01.935104918	NASHVILLE, TN	OKLAHOMA CITY, OK	4/5/04	0	VR
CARGOM01.935113505	MEMPHIS, TN	CHICAGO, IL	4/5/04	0	VR
CARGOM01.935121764	CLEVELAND, OH	DETROIT, MI	4/5/04	0	VR
CARGOM01.935126196	RENO, NV	BROOKS, OR	4/5/04	0	VR
CARGOM01.935127151	SEYMOUR, IN	WINDSOR, WI	4/5/04	0	VR
CARGOM01.935133690	WINSTON-SALEM, NC	PHOENIX, AZ	4/5/04	0	VR
CARGOM01.935141691	GAINESVILLE, GA	FT WORTH, TX	4/5/04	0	VR
CARGOM01.935146665	S BEND, IN	GREEN BAY, WI	4/5/04	0	VR
CARGOM01.935147485	PERRY, OH	DETROIT, MI	4/5/04	0	VR

Figure: 7-15 ALL LOADS

Search Equip | Search Loads

Load Details - CARGOM01.935101745
 Profile · All Equip · My Equip · All Loads · My Loads · Logo

Loads
 Manually Entered Load - Availability Unknown

Contact Information	
Dispatcher:	GRAND HAVEN
Contact Phone:	800-683-6724

Load Information	
Origin:	CENTREVILLE, MD
Destination:	SPRINGFIELD, MO
Origin Phone:	
Destination Phone:	
Ship Date:	4/5/04
Delivery Date:	4/8/04
Equip:	R
Tarps Required:	NO
Weight:	0
Height:	0
Width:	0
Length:	0
Partial Load:	NO
Total Miles:	0

Load Description:
 Notes: 800-683-6724

[Download](#)

Figure: 7-16 ALL LOADS DETAIL INFORMATION

MY LOADS

This link provides the information of loads with is posted by the logged in users. This page contains update, delete, rollover option, the update option can use for updating a load if it is to be updated. By clicking on the delete option it deletes the loads, which are not required by the users. Rollover option can roll over the dates of the loads when dates are need to be changed to a particular dates. There are two more links in this

- Add load: Single load can be added
- Add multiple loads: Multiple loads can be added once.

This page also provides sorting and loads details information as described in all loads page. The following diagrams give detail information of these pages.

View Loads - Microsoft Internet Explorer

Address: <http://www.shippnet.com/deleteloadmultiform.asp>

Shippernet.com
A National Network Of Transport Carriers

Home | About Us | News | Shippernet Presentation | Transport Carrier Directory | Download Notification Software | Contact Us

Search Equip | Search Loads

Loads Profile · All Equip · My Equip · All Loads · My Loads · Logo

Add Load · Add Multiple Loads

Load Records Returned: 108

Load #	Origin	Destination	Ship Date	Weight	Equip Type	Delete/Rollover	Update
COMPUT01.69586371	CHICAGO, IL	GRENADA, MS	4/5/04		FD	<input type="checkbox"/>	Update
COMPUT01.76416346	CHICAGO, IL	GRENADA, MS	4/5/04		FD	<input type="checkbox"/>	Update
COMPUT01.94416389	CHICAGO, IL	GRENADA, MS	4/5/04		FD	<input type="checkbox"/>	Update
COMPUT01.63316347	CHICAGO, IL	GRENADA, MS	4/6/04		FD	<input type="checkbox"/>	Update
COMPUT01.19386358	CHICAGO, IL	GRENADA, MS	4/6/04		FD	<input type="checkbox"/>	Update
COMPUT01.28206380	CHICAGO, IL	GRENADA, MS	4/6/04		FD	<input type="checkbox"/>	Update

start ProjectReport - Micro... View Loads - Microsof... SQL Server Enterpris... Internet 8:17 AM

Figure: 7-17 MY LOADS

Load Update - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Media Go Links

Address http://www.shippernet.com/UpdateLoad.asp?L1=COMPUT01.69586371

Search Equip | Search Loads

Update Load - COMPUT01.69586371 Profile · All Equip · My Equip · All Loads · My Loads · Logo Loads · My Loads

Load Information	
Origin: CHICAGO, IL Zip:	Destination: GRENADA, MS Zip:
Ship Date: 4/5/04	Delivery Date:
Equipment: Flat or Step	Tarps: N
Weight:	Height:
Width:	Length:
Partial Load: N	Total Miles:
Load Description:	
Description:	
Notes:	

Reset Update

Done Internet

start ProjectReport - Micro... Load Update - Micros... SQL Server Enterpris... 8:17 AM

Figure: 7-18 MY LOADS UPDATE

View Loads - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites Media Go Links

Address http://www.shippernet.com/deleteloadmultiform.asp

COMPUT01.60600964	CHICAGO, IL	GRENADA, MS	5/19/04		FD	<input type="checkbox"/>	Update
COMPUT01.22120927	CHICAGO, IL	GRENADA, MS	5/19/04		FD	<input type="checkbox"/>	Update
COMPUT01.84270951	CHICAGO, IL	GRENADA, MS	5/19/04		FD	<input type="checkbox"/>	Update
COMPUT01.35320920	CHICAGO, IL	GRENADA, MS	5/20/04		FD	<input type="checkbox"/>	Update
Load #	Origin	Destination	Ship Date	Weight	Equip Type	Delete/Rollover	Update
COMPUT01.29520938	CHICAGO, IL	GRENADA, MS	5/20/04		FD	<input type="checkbox"/>	Update
COMPUT01.36870994	CHICAGO, IL	GRENADA, MS	5/20/04		FD	<input type="checkbox"/>	Update
COMPUT01.72710972	CHICAGO, IL	GRENADA, MS	5/21/04		FD	<input type="checkbox"/>	Update
COMPUT01.72800927	CHICAGO, IL	GRENADA, MS	5/21/04		FD	<input type="checkbox"/>	Update
COMPUT01.19230915	CHICAGO, IL	GRENADA, MS	5/21/04		FD	<input type="checkbox"/>	Update
COMPUT01.65530962	CHICAGO, IL	GRENADA, MS	5/24/04		FD	<input type="checkbox"/>	Update
COMPUT01.75860951	CHICAGO, IL	GRENADA, MS	5/24/04		FD	<input type="checkbox"/>	Update
COMPUT01.87970931	CHICAGO, IL	GRENADA, MS	5/24/04		FD	<input type="checkbox"/>	Update

Clear Delete Checked loads or Rollover Checked loads to date 4/5/04

Done Internet

start ProjectReport - Micro... View Loads - Microsof... SQL Server Enterpris... 8:18 AM

Figure: 7-19 MY LOADS DELETE AND ROLLOVER

Add Load - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print

Address <http://www.shippernet.com/addload.asp> Go Links

Origin Information

City: State: Zip:

Destination Information

City: State: Zip: Area Code: [Area Code List](#) [Area Code Map](#)

Load Information

Equipment Type:

Ship Date: / /

Delivery Date: / /

Weight: lbs. Height: feet

Length: feet Width: feet

Partial Load: ☒ Tarps: ☐ Total Miles:

Load Specs & Notes:

* Required Fields in Red *

start ProjectReport - Micro... Add Load - Microsoft... SQL Server Enterpris... Internet 8:19 AM

Figure: 7-20 ADD SINGLE LOAD

Add Load - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print

Address <http://www.shippernet.com/addloadmulti.asp> Go Links

Add Multiple Loads [Profile](#) · [All Equip](#) · [My Equip](#) · [All Loads](#) · [My Loads](#) · [Logo](#)

· Remember to use valid equipment codes. Click here to view equipment descriptions.

Origin City	State	Destination City	State	Area Code	Equip	Ship Date	Delivery Date	Partial
sioux falls	sd	madison	sd	605	CT	4/5/04	04/05/2004	<input checked="" type="checkbox"/>
madison	sd	sioux falls	sd	605	CT	4/5/04	04/05/2004	<input type="checkbox"/>
					CT	4/5/04		<input type="checkbox"/>
					CT	4/5/04		<input type="checkbox"/>
					CT	4/5/04		<input type="checkbox"/>
					CT	4/5/04		<input type="checkbox"/>
					CT	4/5/04		<input type="checkbox"/>
					CT	4/5/04		<input type="checkbox"/>
					CT	4/5/04		<input type="checkbox"/>
					CT	4/5/04		<input type="checkbox"/>

Area Code Map

start ProjectReport - Micro... Add Load - Microsoft... SQL Server Enterpris... Internet 8:20 AM

Figure: 7-21 ADD MULTIPLE LOADS

SEARCH EQUIPMENTS

In search equipments page we can search the equipment by current city, current state, destination city, destination state, and equipment types and start dates range presented in the site.

Equipment Search - Microsoft Internet Explorer

Address: <http://www.shippernet.com/searchequip.asp>

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Search Equip | Search Loads

Equip Search Profile · All Equip · My Equip · All Loads · My Loads · Logo

Current City:

Current State:

Destination City:

Destination State:

Equipment Type:

Start Date: to

Figure: 7-22 SEARCH EQUIPMENTS

View Equipment - Microsoft Internet Explorer

Address: <http://www.shippernet.com/viewequip.asp>

Shippernet.com
A National Network Of Transport Carriers

Home | About Us | News | Shippernet Presentation | Transport Carrier Directory | Download Notification Software | Contact Us

Search Equip | Search Loads

Equipment Profile · All Equip · My Equip · All Loads · My Loads · Logo

Search Equip

- Click on Ref# no. to View Equipment Details.
- Sort Equipment by clicking on Start Date, Current Address, Alternate Destination.

Equipment Records Returned: 1

Ref#	Equip Type	Start Date	Current Address	Alternate Destination
12380	V53	4/2/04 1:00:00 AM	MEMPHIS, TN	FLORENCE, KY

Shippernet.com is a Website Developed and Maintained by Computerized Management Systems, Inc.
Developers of Truckwin Direct Connect Dispatch and Accounting Software, See Truckwin Direct Connect

Figure: 7-23 SEARCH EQUIPMENTS RESULTS

SEARCH LOADS

In Search loads page loads can be searched by origin city, origin state, destination city, destination State, equipment type, shipping date range and by delivery date rang provided in the site. The following diagrams give the detail information about how to search loads.

Load Search - Microsoft Internet Explorer

Address: <http://www.shippnet.com/searchload.asp>

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Home | About Us | News | Shippnet Presentation | Transport Carrier Directory | Download Notification Software | Contact Us

Search Equip | Search Loads

Load Search **Profile · All Equip · My Equip · All Loads · My Loads · Logo**

Origin City:
Origin State:
Destination City:
Destination State:
Equipment Type:
Ship Date Range: to
Delivery Date Range: to

Figure: 7-24 SEARCH LOADS

View Loads - Microsoft Internet Explorer

Address: <http://www.shippnet.com/viewload.asp>

Shippnet.com
A National Network Of Transport Carriers

Home | About Us | News | Shippnet Presentation | Transport Carrier Directory | Download Notification Software | Contact Us

Search Equip | Search Loads

Loads **Profile · All Equip · My Equip · All Loads · My Loads · Logo**

Search Loads
· Click on Load# no. to View Load Details.
· Sort Loads by clicking on Origin, Destination, Shipdate.

Load Records Returned: 1

Load #	Origin	Destination	Ship Date	Weight	Equip Type
CARGOM01.935113505	MEMPHIS, TN	CHICAGO, IL	4/5/04	0	VR

Shippnet.com is a Website Developed and Maintained by Computerized Management Systems, Inc.
Developers of Truckwin Direct Connect Dispatch and Accounting Software, See Truckwin Direct Connect
Copyright Computerized Management Systems, Inc. 1997-2004

Figure: 7-25 SEARCH LOADS RESULTS

LOGGING OUT OF THE APPLICATION

The Logout link in the main page in the application lets the Shippers, Agent and transport carrier's logout of the system and end the session variables initiated during the tenure of the Agent.

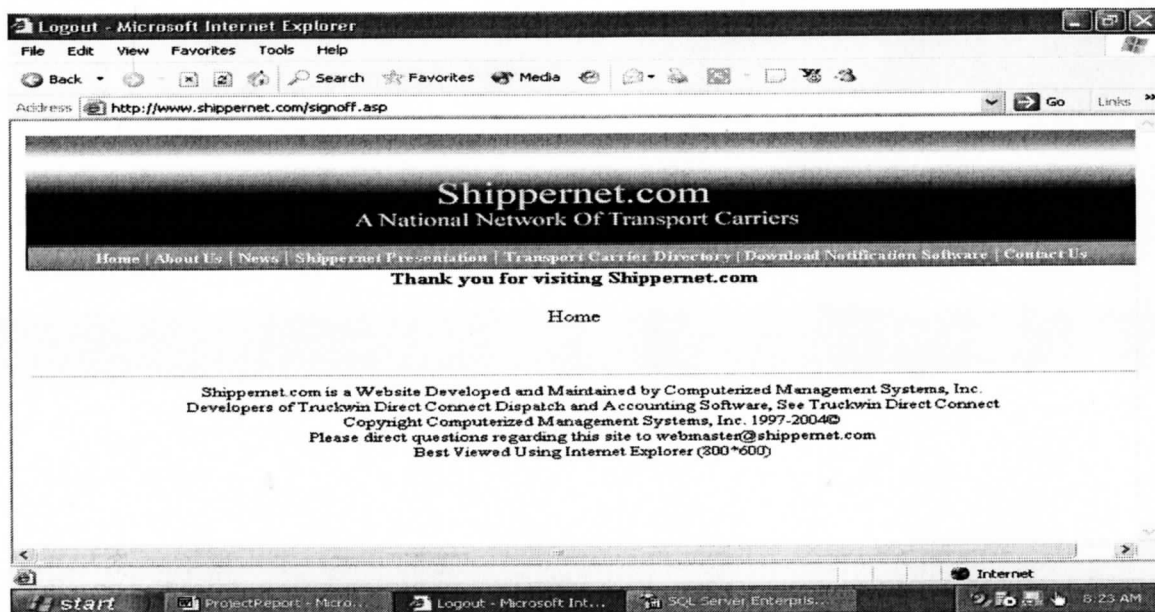


Figure: 7-26 LOG OUT

ADMINISTRATION OPTION FOR USERS IN CMS

Admin options are provided to the shippernet administrators to create new company accounts and adding different dispatchers to the company accounts. Shippernet administrator can change the profiles of companies, dispatchers and admin can also change the passwords up on request of the users. Admin can also delete the accounts, which are no more in use in the site. There is demo option in the admin page under adding new company account, When the account is created with demo option, company account is accessed for one month after one month it give a email for the admin of the site saying that the company demo is expired. This email is send to admin by using SQL


procedure from the SQL server. In adding dispatcher's page we can give a dispatchers admin options for a company so that the dispatcher who is having admin options of a company can add more dispatchers to the company, the company dispatchers in different location can add loads and equipments, by this the company in different location can view the loads and equipments either way. The diagrams below give the detail information of admin options.



The screenshot shows the 'Company Profiles' page on Shippernet.com. It features a navigation bar with links like 'Home', 'About Us', 'News', etc. Below the navigation bar, there are links for 'Search Equip | Search Loads' and 'Profiles'. A table titled 'Records Returned: 293' displays a list of dispatchers with columns for Company Id, User Id, Email, Name, Title, and Admin status.

Company Id	User Id	Email	Name	Title	Admin
3ETRAN01	WE	3E@INTRASTAR.NET	WARREN W	DISPATCHER	N
4MTRUC01	DM	DUANEMEYER@NCN.NET	DUANE MEYER	DISPATCHER	N
6LTRUC01	JB	JBRTZ@6LTRUCKING.COM	JIM B	DISPATCHER	N
77ECPR01	DE	DEZINGA@HOTMAIL.COM	DAVE EZINGA	DISPATCHER	Y
AAACOO01	AM	AMCDONALD@AAACOOOPER.COM	ANGELA M	DISPATCHER	N

Figure: 7-27 ADMIN OPTIONS



The screenshot shows the 'Add Company Account' form on Shippernet.com. The form contains various input fields for company information, including Company ID, Company Name, Address, City, State, Zip, Country, Phone, Fax, Contact, TruckWin32, and Demo. There are also buttons for 'Reset' and 'Add Company'.

Company ID: sample01 (SAMPLE01)
 Company Name: cms
 Address: 700 s summit ave
 City: SIOUX FALLS
 State: sd
 Zip: 57104
 Country: USA
 Phone: (805) 270-2347
 Fax: () -
 Contact: sunitha
 TruckWin32: Shipper
 Demo: ☒
 * Required Fields in Red *
 Reset Add Company

Figure: 7-28 ADD COMPANY ACCOUNT

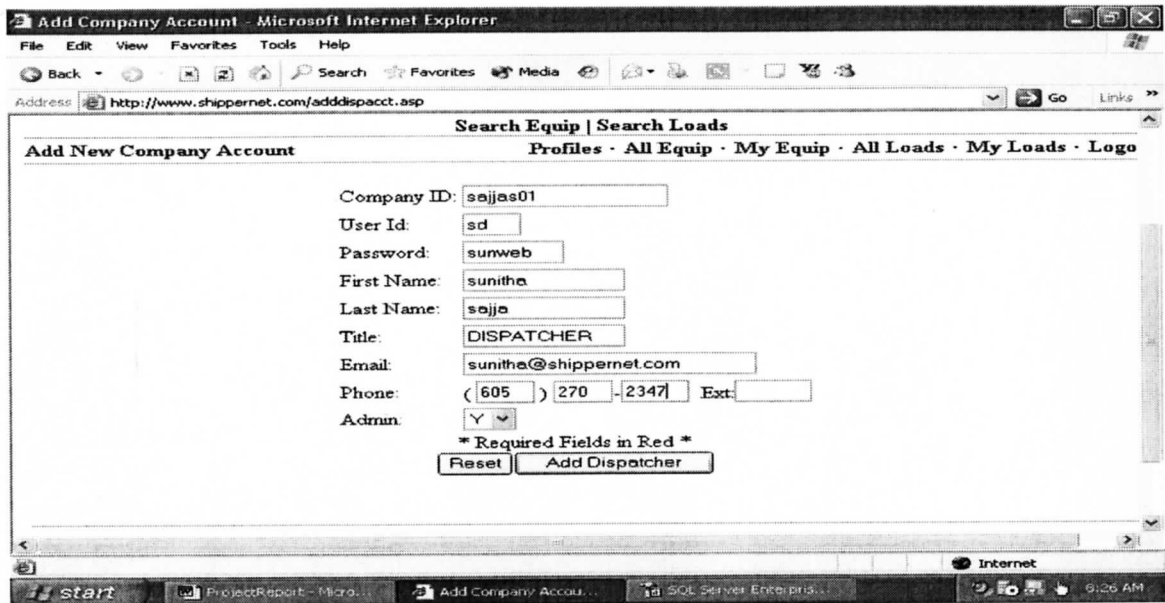


Figure: 7-29 ADD DISPATCHER

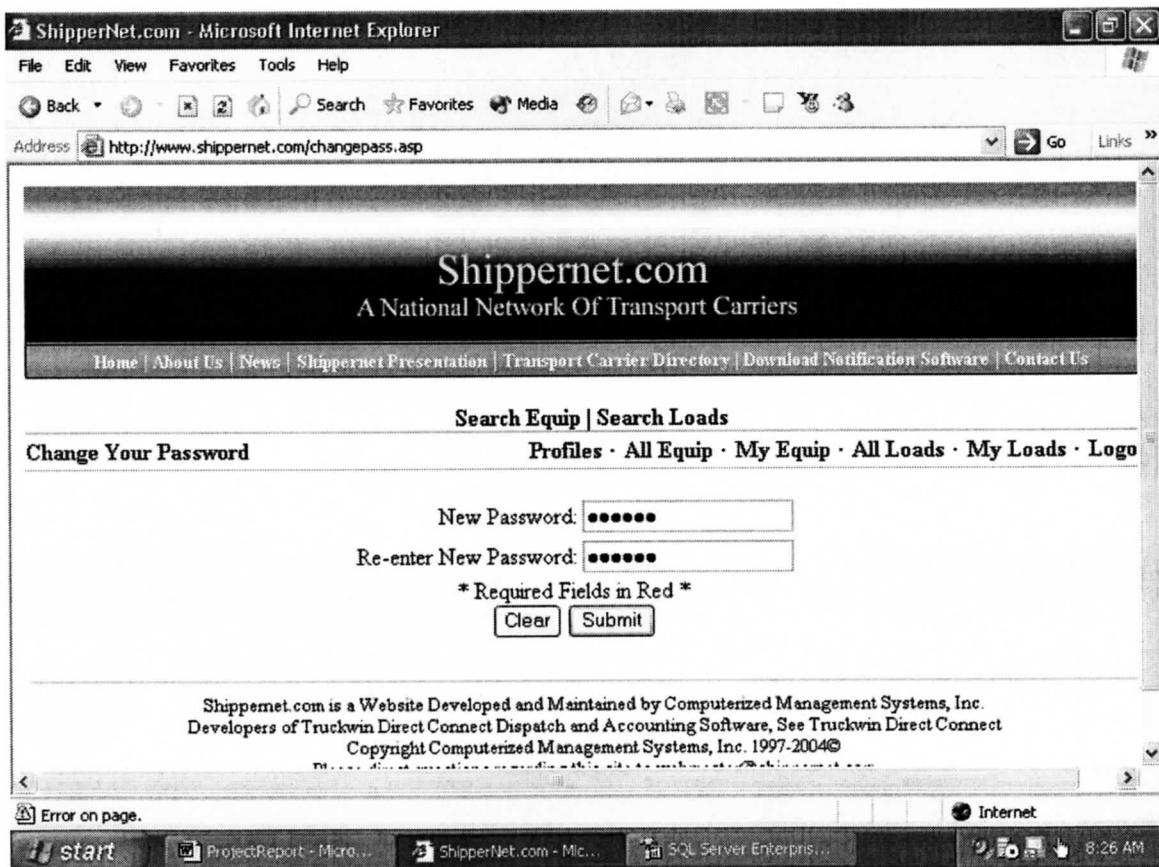


Figure: 7-30 CHANGE PASSWORD

ACCOUNT REQUEST FOR SHIPPERS AND CARRIERS

This page provides four different kinds of account request forms. Users can choose an account according to their needs. The following are the different forms, which are provided in the shippernet site:

- Transport Carrier
- Shipper
- Shipper Agent
- Logistics Company

It also has as an online request information form so that users can get information upon their request. After filling out the form and clicking on the submit button it sends an email to the admin of the site about the request of the account, the admin will verify the users information depending up on the USDOT numbers and MC numbers and provides an account for users. The following demonstration diagrams provide the information of the forms.

The screenshot shows a web browser window titled "Request for Shippernet Account - Microsoft Internet Explorer". The address bar displays "http://www.shippernet.com/AcctTransCarrier.asp". The form is titled "Request for Transport Carrier Account" and contains the following fields:

- First Name: [Text Box]
- Last Name: [Text Box]
- Company Name: [Text Box]
- Physical Address: [Text Box]
- City: [Text Box]
- State: [Text Box]
- Zip/Postal Code: [Text Box]
- Same ☐ Billing Address: [Text Box]
- City: [Text Box]
- State: [Text Box]
- Zip/Postal Code: [Text Box]
- Country: US (Dropdown Menu)
- Local Phone: [Text Box]
- Fax: [Text Box]

The browser's taskbar at the bottom shows the "start" button and several open applications: "ProjectReport - Micro...", "Request for Shippernet...", and "SQL Server Enterprise...". The system clock indicates "8:28 AM".

Figure: 7-31TRANSPORT CARRIER'S FORM

Request for Shippernet Account - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print

Address <http://www.shippernet.com/AcctTransCarrier.asp> Go Links

First Name:

Last Name:

Company Name:

Physical Address:

City:

State:

Zip/Postal Code:

Same ☐ Billing Address:

City:

State:

Zip/Postal Code:

Country: US

Local Phone:

Fax:

Email:

start ProjectReport - Micro... Request for Shippernet... SQL Server Enterpris... Internet 8:28 AM

Figure: 7-32 SHIPPERS FORM

Request for Shipper's Account - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print

Address <http://www.shippernet.com/AcctShipper.asp> Go Links

Request for Shipper's Account

First Name:

Last Name:

Company Name:

Physical Address:

City:

State:

Zip/Postal Code:

Same ☐ Billing Address:

City:

State:

Zip/Postal Code:

Country: US

Local Phone:

Fax:

start ProjectReport - Micro... Request for Shippernet... SQL Server Enterpris... Internet 8:28 AM

Figure: 7-33 SHIPPER AGENTS FORM

Request for Shippernet Account - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print

Address <http://www.shippynet.com/AcctBroker.asp> Go Links

First Name:

Last Name:

Company Name:

Physical Address:

City:

State:

Zip/Postal Code:

Same ☐ Billing Address:

City:

State:

Zip/Postal Code:

Country: US

Local Phone:

Fax:

Email:

Short Description of:

start ProjectReport - Micro... Request for Shippernet... SQL Server Enterpris... Internet 8:29 AM

Figure: 7-34 LOGISTICS COMPANY FORM

Additional Information for Shippernet - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print

Address <http://www.shippynet.com/AdditionalInfo.asp> Go Links

Request Additional Shipper or Carrier Information

First Name:

Last Name:

Company Name:

Address:

City:

State:

Zip Code:

Phone Number:

Country: US

Type of Carrier: Intermodal Carrier Long Haul-Truckload

Type of Shipper: Intermodal Freight Direct Shipper

Number of Trucks: 1-5

Number of PC's: 1

How did you hear about us? Magazine Ad

Email:

start ProjectReport - Micro... Additional Informatio... SQL Server Enterpris... Internet 8:29 AM

Figure: 7-35 ONLINE REQUEST INFORMATION FORM

FINANCIAL AND MANAGEMENT INFORMATION

Financial and management information page gives the detail information of the trucking company's facilities, which is useful in the trucking industry. This page gives different kinds of facilities links like.

- Cost Per Mile Financial Profiles
- Financial ratios for the Truckload carrier
- Strategies to generate maximum cash flows
- Federal, State and Local Tax Saving Tips
- Discussion of the Nickel per Mile Program
- PL, PD, CARGO Insurance Info
- Prepaid Legal
- Current Nationwide Diesel Fuel Prices
- Regional and Annual Conference Information

All these links gives the useful information's for the trucking companies, which are present in the shippernet.



Figure: 7-36 FINANCIAL AND MANAGEMENT INFO

TRANSPORT CARRIER DIRECTORY

The page displays the transport carriers listed by state in alphabetical order and as well as in area code zones. The states having hyperlinks provides the carriers presents in particular states. When clicking on the company links it gives the detail information of the company where it is located and can check whether the company is listed in www.saferys.org site, where this provides the federal motor carrier safety data to the trucking industry. The below diagrams gives the detail information of the transport carriers.

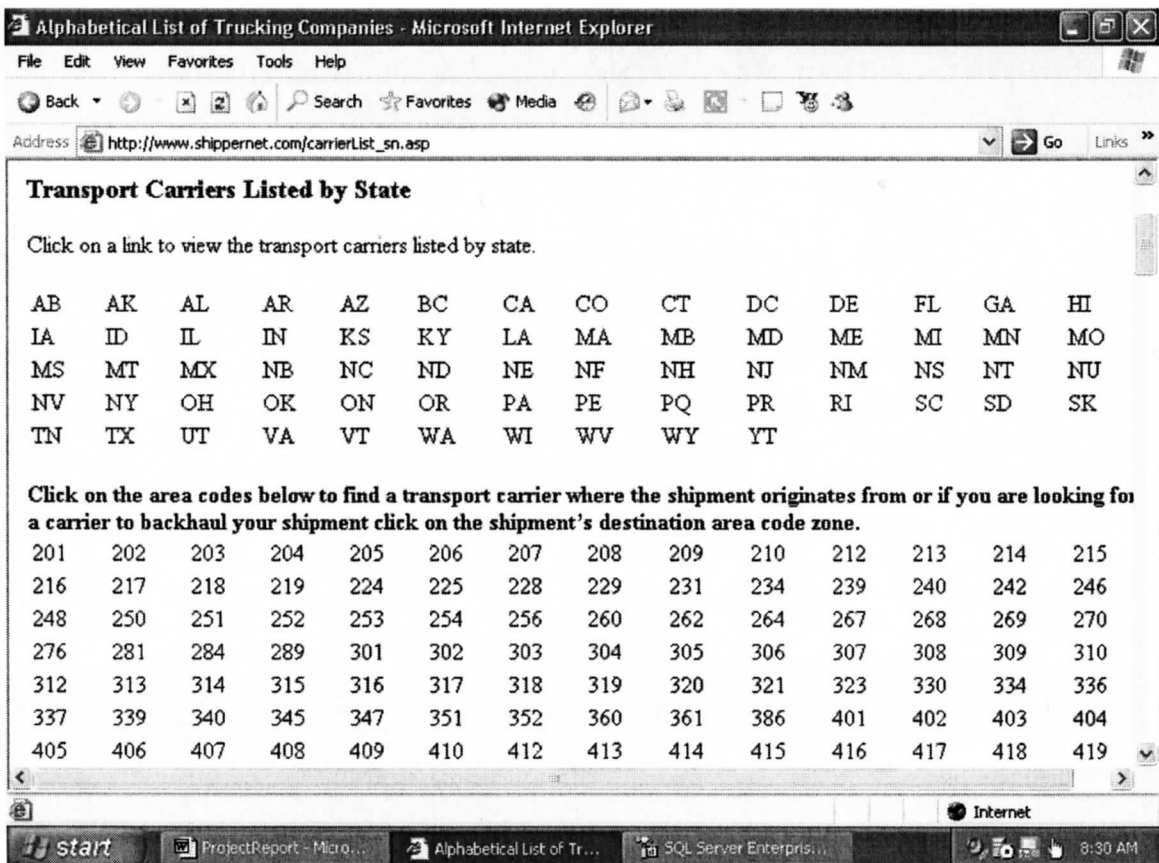


Figure: 7-37 TRANSPORT CARRIER DIRECTORY



Figure: 7-38 TRANSPORT CARRIER INFORMATION

LOAD LOCATION INFORMATION

Load location information screen has a login entry for a particular companies so that they can login and to track there loads whether they are delivered on time or not and to see the loads and equipments where they are located.



Figure: 7-39 LOAD LOCATION LOGIN

Trip Table - Microsoft Internet Explorer

Address: http://www.shippnet.com/TripStatus.asp

Company: VANTAGE LOGISTICS Customer: PCMALMEM - P C MALL

Search for Trip: BOL# P O # Cust. Re#

[Return to Login](#)

Order #	Trip Number	Origin	Shipped	Status	Destination	Last Known City
27571	PC02824A	MEMPHIS, TN	12/18/03	Active	JOLIET, IL	JOLIET, IL
27268	PC02838	MEMPHIS, TN	12/22/03	Delivered	JOLIET, IL	JOLIET, IL
27267	PC02834	MEMPHIS, TN	12/22/03	Delivered	INDIANAPOLIS, IN	INDIANAPOLIS, IN
27301	PC02837	MEMPHIS, TN	12/22/03	Delivered	HIGHLAND MILLS, NY	HIGHLAND MILLS, NY
27269	PC02836	MEMPHIS, TN	12/22/03	Delivered	INDIANAPOLIS, IN	INDIANAPOLIS, IN
27255	PC02684	MEMPHIS, TN	12/23/03	Delivered	COOPERSTOWN, NY	COOPERSTOWN, NY
27299	PC02815	MEMPHIS, TN	12/23/03	Delivered	MILWAUKEE, WI	MILWAUKEE, WI
26438	PC02688	MEMPHIS, TN	12/23/03	Delivered	NEW YORK, NY	NEW YORK, NY
27300	PC02686	MEMPHIS, TN	12/23/03	Delivered	PHILADELPHIA, PA	PHILADELPHIA, PA
27288	PC02685	MEMPHIS, TN	12/23/03	Delivered	MILWAUKEE, WI	MILWAUKEE, WI
26453	PC02816	MEMPHIS, TN	12/24/03	Delivered	GARDEN CITY, NY	GARDEN CITY, NY
27855	PC02816A	MEMPHIS, TN	12/24/03	Delivered	GARDEN CITY, NY	GARDEN CITY, NY
26527	PC02846	MEMPHIS, TN	12/29/03	Active	BETHESDA, MD	BETHESDA, MD
26527	PC02846	MEMPHIS, TN	12/29/03	Active	BETHESDA, MD	BETHESDA, MD
26528	PC02810A	THOROFARE, NJ	12/29/03	Active	PITTSFIELD, MA	PITTSFIELD, MA
26599	PC02688A	NEW YORK, NY	12/30/03	Delivered	MEMPHIS, TN	MEMPHIS, TN
26734	PC02858	MEMPHIS, TN	12/31/03	Delivered	LAKEWOOD, NJ	LAKEWOOD, NJ

start ProjectReport - Micro... Trip Table - Microsoft... SQL Server Enterpris... 8:32 AM

Figure: 7-40 LOAD LOCATION INFORMATION

CREDIT CHECKS

Credit checks pages have a login entry for the users so that they log in and view the data of different companies for improving business.

Login - Microsoft Internet Explorer

Address: http://www.shippnet.com/login_ck.asp

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Credit Checks Information (Private Carrier Network members only)

User ID:

Password:

Company ID:

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Developers of Truckwin Direct Connect Dispatch and Accounting Software. See Truckwin Direct Connect
Copyright Computerized Management Systems, Inc. 1997-2004©
Please direct questions regarding this site to webmaster@shippnet.com
Best Viewed Using Internet Explorer (800*600)

start ProjectReport - Micro... Login - Microsoft Inte... SQL Server Enterpris... 8:32 AM

Figure: 7-41 CREDIT CHECKS LOGIN

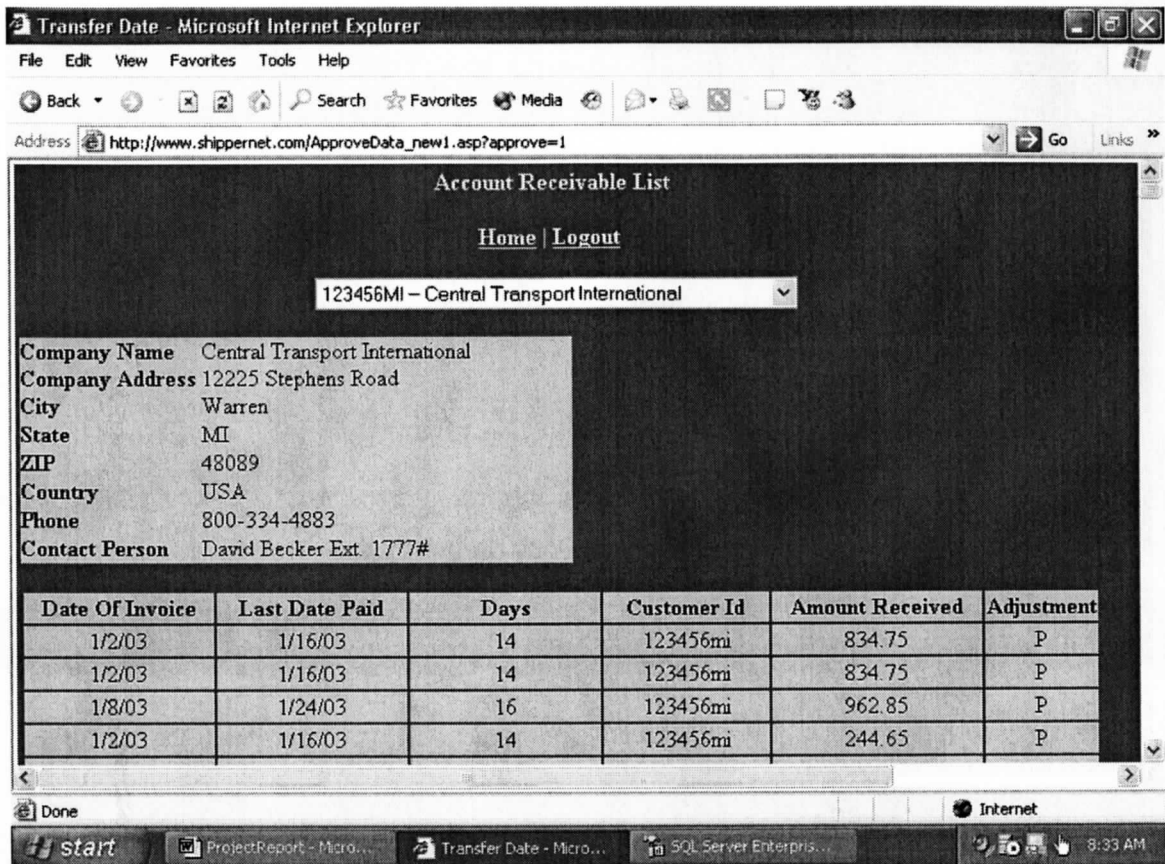


Figure: 7-42 CREDIT CHECKS INFO

MISCELLANEOUS LINKS

Shippnet site contains other miscellaneous links, which gives the detail information of trucking companies for the users. The links like.

- Carrier Safety Information: This provides the federal motor carrier safety data to the trucking industry.
- Truckwin Direct Connect Dispatch & Accounting: This link provides the trucking dispatch and accounting software details, developed by CMS, Inc.
- Transportation Industry Benchmark Comparison: This Link contains a complete comprehensive financial analysis questionnaire of how a company compares with a national database of peer trucking companies.

- Financial Services: This link is an affiliated company of Shippernet.com, provides billing, collecting and settlement services for the member carriers.

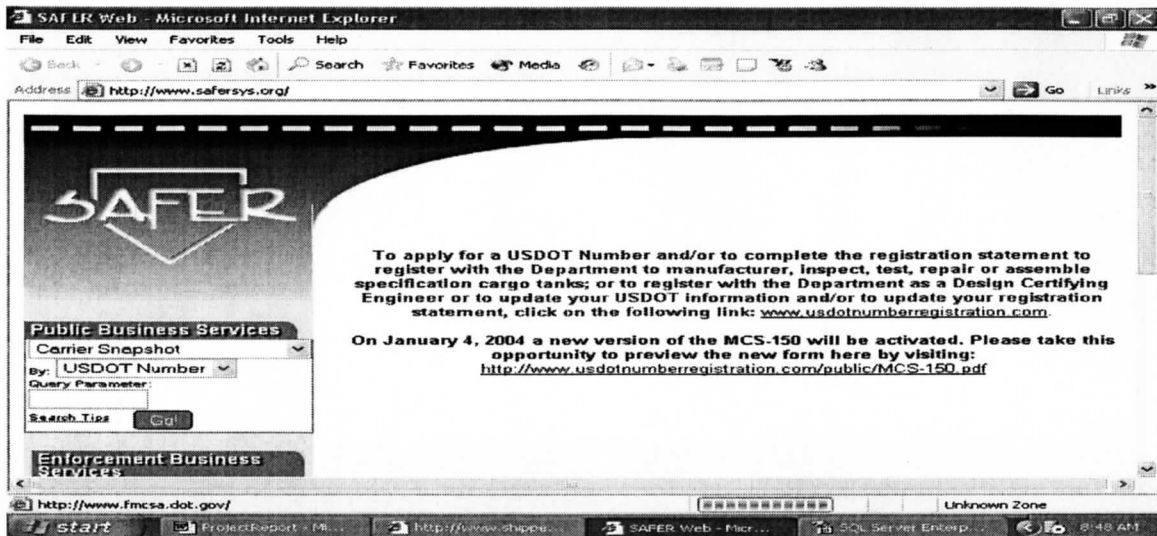


Figure: 7-43 CARRIER SAFETY INFORMATION

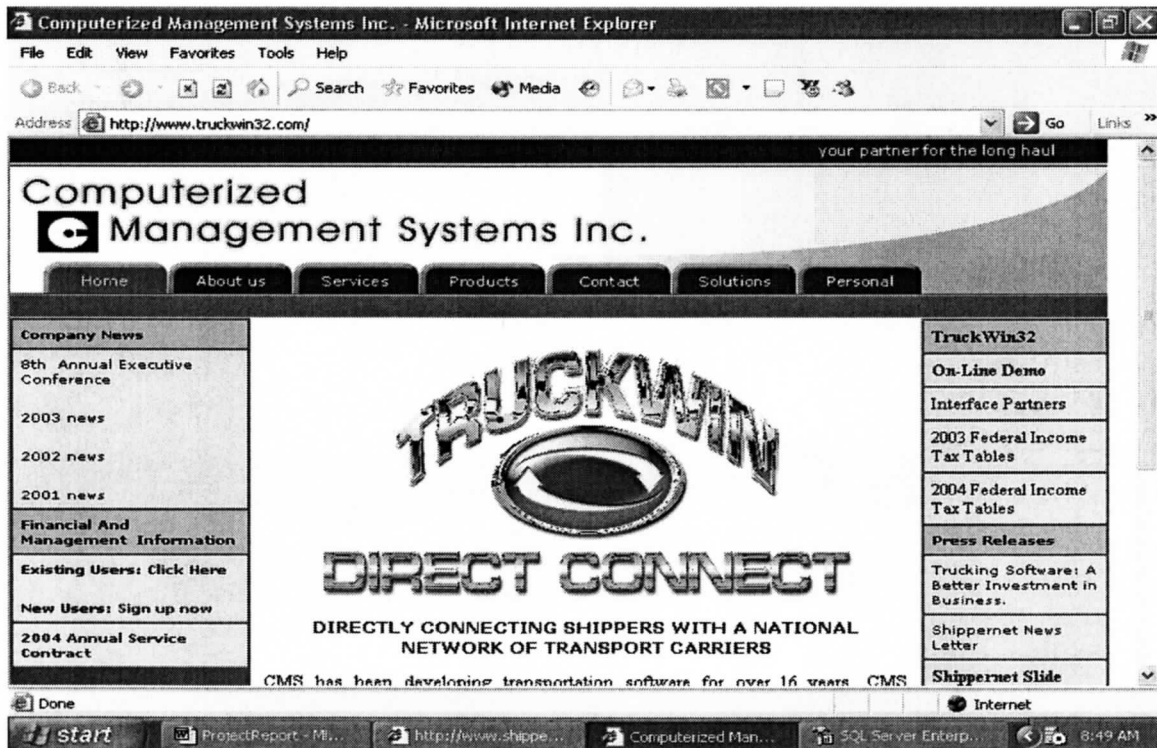


Figure: 7-44 TRUCKWIN DIRECT CONNECT

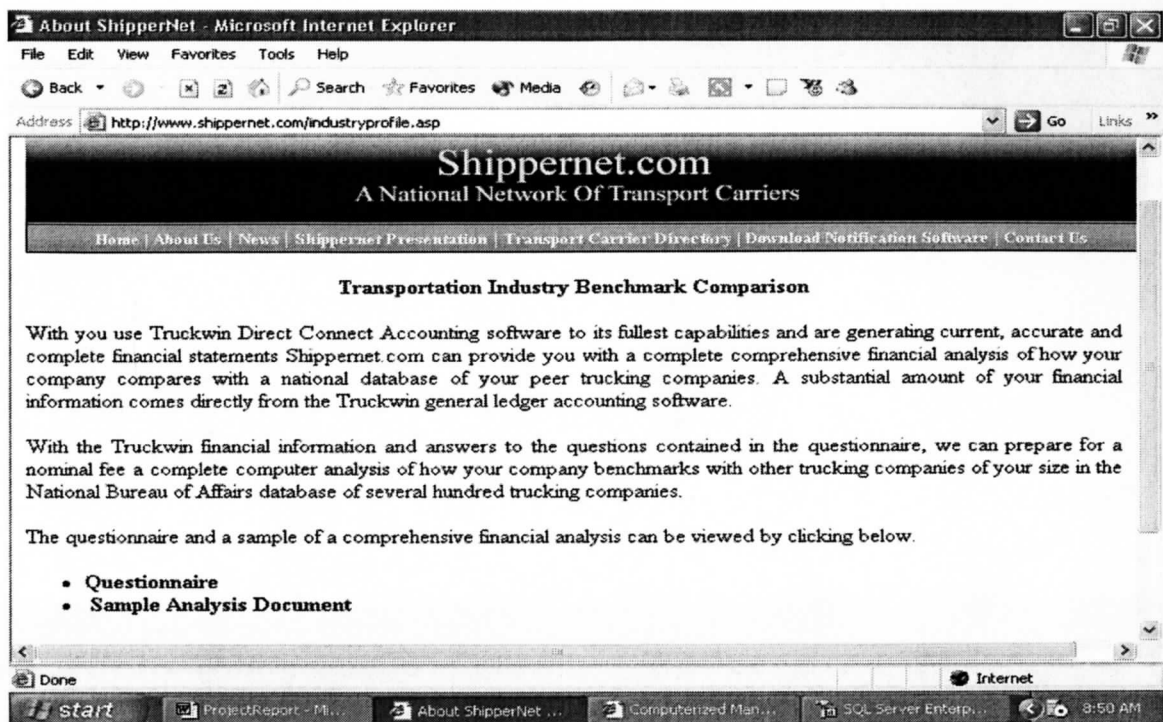


Figure: 7-45 TRANSPORTATION INDUSTRY BENCHMARK COMPARISON

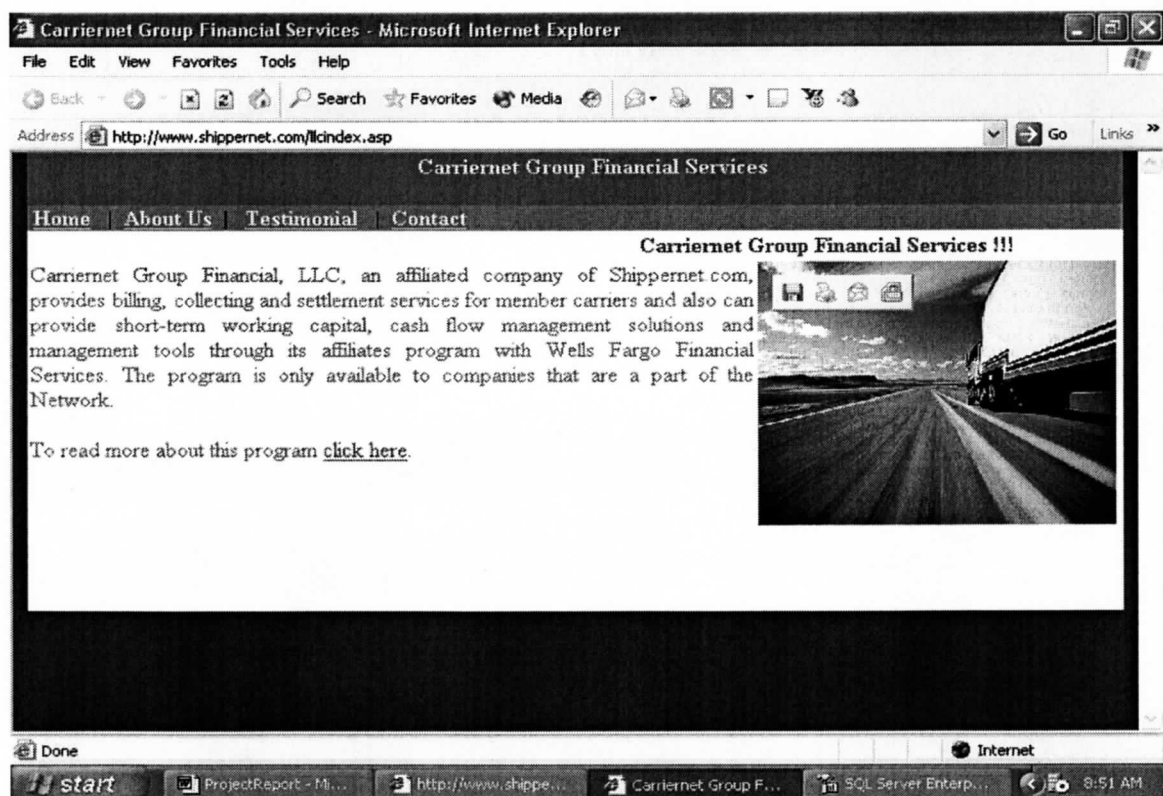


Figure: 7- 46 FINANCIAL SERVICES

8. CONCLUSION

This Project Shippernet.com was designed, developed and maintained by Computerized Management Systems, Inc with copyright policy. This web-based application is not only for load and equipment viewing it also saves the personnel time and telephone cost for the user. The loads and equipments information is continually updated, as events are occurring, so that the user can negotiates the loads and equipment on time. This application is user friendly.

- An efficient and well-tuned database is maintained for ShipperNet information
- It is an efficient website, which provides the front end for the user operations in ShipperNet.
- ShipperNet SQL function scripts to enabler the communication between the Web server and RDBMS
- User Manual for Editor which provides detailed instruction on maintaining the website.

9. References

1. Web Site for references:
 - a. <http://www.truckload.com>
 - b. <http://www.getloaded.com>
2. David Buser, John Kauffman, Juan T. Libre, Brain Francis, David Sussman, Chris Ullam, Jon Duckett (2000). Beginning Active Server Pages 3.0. Illinois: Wrox Press Inc.
3. Analysis and Design of Information Systems: McGraw Hill Publication
4. Mark Chipman, Mike Gunderloy (2000). SQL Server in Record Time San Francisco: Sybex Press.
5. Technology overview from www.microsoft.com

Appendix A: SOURCE CODE

Redacted for printing